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THE RISK HANDLING BEHAVIOUR OF WHITE WATER KAYAKERS

By

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ABSTRACT

It is a challenge for those in health care to develop programs and strategies to improve personal health practices. To help address this challenge, this thesis examines the risk behaviours of white water kayakers, a group of people alleged to experience few injuries because of their ability to effectively handle the risks of the sport. In reviewing the literature it was noted that little is known about the individual and situational factors that influence the learning and practice of risk-handling behaviours.

A qualitative ethnographic approach was used to capture the character of the kayakers' naturally occurring behaviour. Field notes and interview transcripts were produced from periods of participant observation in a white water kayaking course and from interviews with seven white water kayakers.

The systematic analysis of these interview transcripts and field notes revealed that the kayakers engaged in the sport because of its anticipated benefits. Rather than ignoring the potential risks, however, they aggressively tried to formulate options that reduced their risk of injury. Formulating options involved a complex, dynamic process of decision-making. The kayakers needed skill, knowledge and strong beliefs in their abilities to handle the risks before they were able to integrate all the information necessary for effective decision-making. The development of these attributes was found to be a process that occurs over time with instruction and experience. The study identified individual and situational factors that affected the development of skill, knowledge and beliefs of self-efficacy. Belief in their ability to handle the risks was the key individual factor affecting the kayakers' risk behaviour and the subsequent development of their risk-handling behaviour. The situational factors included the type of companions and the type of kayaking experience. The kayakers learned from participating in social interactions and discussions with experienced kayakers, and from making decisions and paddling themselves.

The findings of this thesis suggest that developing programs which focus on the anticipated benefits of developing effective risk-handling behaviours may be a more effective means of engaging people in the learning process than programs which focus exclusively on the negative aspects of risk activities. The findings of this thesis also suggest guidelines for program development. Actively involving people in the learning experience by providing opportunities for group discussions, helping people identify the risks in the situation and then providing opportunities to learn and practice behaviours that minimize the risk of injury in a safe environment were found to be effective means of developing risk-handling behaviours.

The background for this study drew on several bodies of literature: health promotion, adventure recreation, risk decision-making, and experiential learning. The findings demonstrate the ability of interdisciplinary collaboration to provide fresh insights for promoting health and preventing disease and injury.

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Pursuing this project was much like my white water kayaking experience. There were wonderful times when concepts became clear, the words appeared and I actually experienced "flow". There were also times, as in kayaking, where I ran into the "wall of death" and felt incapable of completing the project. There were other times of waiting for feedback or times when other life activities took priority. I 'eddied out" during these times and refocused on the journey ahead. When other disciplines came on stream it caused some ripples, as happens when streams join rivers. At these times decisions had to be made: should I lean upstream and risk flipping over or lean down stream and go with the current and increase the chance of a successful experience. To help me learn the risk handling behaviours necessary for a successful thesis journey I was fortunate to have the right people on my team.

First amongst them are my family. My husband Chris, whose enduring patience, love and support helped me to keep this project in perspective. I know I can "lick all my ten fingers and never find a man so good". My children, Richard and Michelle, offered many words of encouragement and believed in my ability to succeed.

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Heartfelt thanks must also go to the white water kayakers who willingly shared their experiences with me, allowing a better understanding of how risk handling behaviours are learned and practiced. These insights have caused me and I hope others to look at promoting health and preventing disease and injury with new eyes.

CHAPTER 1

Introduction

Many people are making impressive efforts to improve their health by changing their personal health practices. They are becoming more active, stopping smoking or choosing not to start, wearing seat belts and driving sober. In spite of these changes, there is evidence that there remains considerable room for improvement. The Second Report of the Health of Canadians reveals that rates of smoking and multiple drug use have increased substantially among adolescents, the proportion of overweight men and women has increased, rates of physical activity continue to decrease with age, and many people are choosing to engage in unprotected sexual activity with multiple partners (Federal, Provincial & Territorial Advisory Committee on Population Health, 1999). It is a challenge for those engaged in health promotion and disease/injury prevention to develop programs and strategies that will improve personal health practices.

Promoting health and preventing disease and injury is complicated by the fact that many health care providers have been conditioned to view risk behaviours negatively. As a result, many of the strategies and programs promoting health and preventing disease and injury focus on the negative outcomes of risk behaviours and seek to eliminate these behaviours. People's expectancies regarding expected benefits have been shown to be more reliably associated with their risk-taking behaviour than were their beliefs regarding the potential negative outcomes (Fromme, Katz, & Rivet, 1997). Therefore, the health promotion programs and disease or injury prevention programs which focus on the negative outcomes may be missing their target. Some of the more recently developed programs promote risk-handling behaviours to reduce rather than eliminate the negative aspects of risk behaviours while still allowing people to enjoy the benefits. Unfortunately little is known about the nature of risk-handling behaviours or the factors which influence the learning and practice of these behaviours (Yates, 1992).

In contrast to the field of health promotion, where the focus has traditionally been on the negative outcomes of risk behaviour, those involved in the field of adventure recreation focus on the positive outcomes of risk activities. Adventure recreation activities provide opportunities for people to experience intense cognitive and affective involvement which results in self discovery and personal growth (Ewert & Hollenhorst, 1989; Robinson, 1992). Those involved in the field of adventure recreation seek to provide opportunities whereby people participating can realize these benefits through the development of technical skills and effective decision-making abilities (Ewert & Hollenhorst, 1989; Schuett, 1991). Using these skills, participants are able to handle the risks in adventure recreation and avoid injury. If we in health care can more fully understand the individual and situational factors that influence the learning and practice of these risk-handling behaviours, it may lead to the development of more effective health promotion and disease/injury prevention programs and strategies.

Background Information

This study stems from a personal interest in the behaviour of those who participate in high-risk sports, especially white water kayaking, and from a need in my role as a community health nurse to develop more effective health promotion and disease/injury prevention programs. In discussions with people who engage in high-risk sports such as white water kayaking, backcountry skiing, and rock climbing, I have come to admire their ability to engage in these risk activities without experiencing serious injury. The research shows that there is an increase in the number of people engaging in these high-risk sports all over North America (Ewert, 1994; Robinson, 1992). The research also shows that these risk takers are rarely reckless in decision making (Carroll, 1988; Groves, 1987; Holmes, 1983) and in fact have comparatively low rates of injury when compared with those who participate in the more traditional sporting activities such as football or basketball (Ewert & Johnson, 1983; Hale, 1987).

In my practice as a community health nurse working in a small northern community, I work with people of different age groups, in a variety of settings including schools, people's homes and senior's and recreation centers. Many people are engaging in activities that put their health and the health of their children at risk. I have found that programs which focus on the negative outcomes of risk activities are not always effective in changing behaviour. In fact I have found it is often difficult to even attract interest in programs which focus on the negative outcomes. As I began my search of the literature for this study, I gained a new perspective on risk-taking behaviours. I realized more fully how the understanding of risk affects the response to risk behaviours and risk situations. The response of those involved in the field of adventure recreation to individuals who engage in high-risk recreation activities is to provide programs with the goal of enabling these individuals to make effective risk-decisions and to handle the risks. A more thorough understanding of the risk handling behaviour of those who engage in high risk recreational activities and the way in which they learn these behaviours may provide insights that are of benefit to those in the field of community health care.

Purpose of the Study

The purpose of the study is to better understand the ways in which people engage in risk-handling behaviours and the factors which influence the learning and practice of these behaviours. Specifically, this study explores the risk-handling behaviour of white water kayakers with a view to gaining an understanding of the individual and situational factors that influence the learning and practice of their risk-handling behaviours. White water kayaking is a sport that, because of the very nature of the environment in which it takes place, has the potential to produce high risks or even cause death. Through a detailed analysis of transcripts of interviews with kayakers and field notes gathered during a white water kayaking course, an interpretation is offered of the white water kayaker's risk-handling behaviours and the processes by which these behaviours are learned.

Relevance of Study to Community Health Care

There are many factors in the socioeconomic and physical environments that impact on health, either directly or indirectly through their influence on personal health practices. While it is recognized that the health sector has a key direct role in improving health, many of the determinants of health are outside the traditional health system (Federal, Provincial, & Territorial Advisory Committee on Population Health, 1999). Building alliances with other sectors is recommended as a primary strategy for improving the health of the population in the Second Report on the Health of Canadians (Federal, Provincial & Territorial Advisory Committee on Population Health, 1999). The recreation sector is identified in the report as one of the necessary partners.

This study is therefore significant in that it brings together research from the field of adventure recreation and health. Many health studies explore risk behaviours such as drug and alcohol use (Fromme, Katz, & D'Amico, 1997), drinking and driving (Wilson & Jonah, 1985) and unsafe sexual practices (Plant, Plant, Peck & Setters, 1989). Exploring the behaviour of white water kayakers engaged in adventure recreation targets a different population of risk takers. Exploring the risk behaviours and also, more importantly, the risk-handling behaviours of this group provides fresh insights into the individual and situational factors that affect the development of risk-handling behaviours. As this study explores the behaviour of white water kayakers it may be of interest to those in the field of adventure recreation and thus be a first step in encouraging dialogue between the recreation and health care sectors.

To be effective, programs that promote health and prevent disease and injury must first attract the interest of those engaging in risk behaviours. It is therefore important to examine the approach used to interest the white water kayakers in developing and implementing behaviours which enable them to handle the risks. The understanding gained from this examination may furnish community health professionals with new ideas for attracting people's interest in promoting health and preventing disease and injury.

The risk decision is an important step in initiating any risk-handling behaviour. In the literature it was noted that there are two types of risk decisions. One is a process of careful deliberation and while the other is an automatic response reflecting the intuitive, skilled response of an expert or the behaviour of one engaging in the routine activities of daily life (Wagenaar, 1992; Pitz, 1992). It is necessary to recognize both types of decision-making in any discussion of risk behaviour. This study explores the white water kayakers' risk decision-making providing insights into the factors that affect their risk decisions. Knowledge of these factors can serve to better direct strategies and programs seeking to change behaviours.

Without a clear understanding of risk-handling behaviours and the factors that affect the learning and practice of these behaviours, health care providers may fail to develop programs and strategies which effectively promote health and prevent disease and injury. This study seeks to increase the understanding of these risk-handling behaviours and the process by which these behaviours are learned. Arising from the study, guidelines for program development to enhance the advancement of risk-handling behaviours are suggested.

The structure of this thesis is as follows. Chapter 2 begins with a discussion of the concept of risk and demonstrates how the understanding of risk affects the way in which risk activities are approached. The literature review then discusses the approach used in traditional health promotion and disease/injury prevention programs and contrasts this with the approach used by those in adventure recreation programs. In the next part of the chapter the risk decision-making literature is reviewed. The chapter concludes with an exploration of the experiential learning literature to provide the background from which to view the kayakers' process of learning the risk-handling behaviours.

Chapter 3 describes the approach used in this study and provides the framework for the particular methods of data collection and analysis that were used. Ethical considerations are also addressed in this chapter. The analysis of the data led to the identification of major themes, which are expanded upon in chapters 4, 5, and 6. Chapter 4 describes the risk experience and the

behaviours that are used to handle the risk. In Chapter 5 the role of the social environment in the development and implementation of risk-handling behaviours is discussed. The processes by which the kayakers learn to handle the risks are described in Chapter 6.

In the final chapter the themes are brought together in a discussion of risk decision - making, which is central to any risk handling behaviour. The kayakers are shown to take a proactive role in dealing with risk, aggressively trying to formulate options that will enable them to handle the risk. I suggest that the risk decision-making that takes place in the natural environment is more complex and dynamic than has previously been described in the decision-making literature. The increased understanding of the development and practice of risk-handling behaviour gained in this study has implications for the development of health promotion and disease/injury prevention programs and also for the development of white water kayaking programs. These implications are discussed, as are the limitations of the findings and suggestions for future research.

CHAPTER 2

Review of Literature

Introduction

Three main bodies of literature are reviewed to provide a foundation from which to view the risk-handling behaviour of white water kayakers. The first body of literature concerns the concept of risk. There is an element of risk in all that we do; in fact life itself is about taking risks; however, the understanding of and the response to risk varies. As this study explores the adventure recreation activity of white water kayaking, to provide information that will assist those in health promotion and disease/injury prevention, the following discussion examines the concept of risk from these two perspectives. The discussion also explores how the differences in understanding of risk lead to the development of different responses to risk situations and behaviours.

The second body of literature examines risk decision-making. The risk decision is the first step in engaging in risk behaviour or in initiating risk-handling behaviour. There are many theories that have been developed to explain how individuals make risk decisions. A discussion of these theories serves as a backdrop to the examination of the white water kayakers' process of decision making. There are individual and situational factors that affect risk decision-making. Among these factors, the most notable is self-efficacy, as this concept has been described as influencing the way individuals feel, think, and act. The literature concerning beliefs in self-efficacy and the development of these beliefs is explored as well.

White water kayakers learn many of the risk-handling behaviours during the kayaking experience; therefore, the third body of literature reviewed concerns experiential learning. Four aspects of experiential learning are discussed: stages of skill acquisition, process of movement through the stages, the nature of the experience, and the social aspect of learning. Examination of

these aspects provides the background from which to view the white water kayakers' learning experience.

Concept of Risk

The dictionary definition of risk "is the possibility of loss." Yates' (1992) meta-analysis of risk-taking behaviour outlines three critical elements of the risk construct: "(a) potential losses, (b) the significance of those losses, and (c) the uncertainty of those losses" (p.4). He suggests that the significance and uncertainty of the loss is based on a subjective assessment of the situation. What is perceived to be a risk situation for one person may not be considered a risk situation for another.

Keyes (1985), in his study of several types of risk-takers including a high-wire walker, a skydiver and individuals choosing drastic life and career changes, observes another element in the risk construct. He proposes that to take risks one must confront fear. "This," he says, " is the essence of genuine risk taking" (p. 276). There are tangible rewards for confronting fear and taking risks. Once confronted, fear changes from a negative sensation of possible loss, to a positive sensation of exhilaration and heightened arousal. Keyes (1985) notes that when shared with others, the feelings of exhilaration and heightened arousal serve as "a source of camaraderie" (p. 33).

Just as there are differences in the way one perceives a risk situation, there are also differences in the way in which one reacts to a risk situation. Personality theorists explore the possibility that some individuals have a "sensation seeking" trait that draws them into activities in which there is the perceived possibility of death. Keyes (1985) discovered that some of his subjects craved the feeling of exhilaration and stimulation and became listless without it. This finding coincides with studies done by Zuckerman (1983) and Zuckerman, Simons and Como (1988) who theorize and test the theory that individual differences in sensation seeking are in part attributed to individual differences in brain chemistry. Bromiley and Curley's (1992) review of the research on individual differences in risk-taking finds a lack of theories that address critical

situational and individual factors involved in risk-taking behaviours and suggest a need for situational analysis to better our understanding of the role of individual differences in risk-taking behaviour.

Organizations, like individuals, perceive risk differently. The way in which organizations perceive risk affects their response to risk situations and risk behaviours. Those in health promotion and disease/injury prevention understand risk differently from those involved in adventure recreation. Their understanding of risk and their response to it is discussed below.

Health Promotion and Disease/Injury Prevention Concept of Risk

Those involved in health care seek to improve people's health and well-being using strategies that promote health and prevent disease and injury. From the health promotion and disease/injury prevention perspective, risk has traditionally been viewed as a negative event, as what is often put at risk is one's health (Adler, Kegeles & Genevro, 1992). To promote health and prevent disease and injury one draws on assumptions about the causes of the loss of health. The Second Report on the Health of Canadians (Federal, Provincial & Territorial Advisory Committee on Population Health, 1999) shows that factors in the socioeconomic and physical environment, as well as early childhood experiences, personal health practices and genetic factors have a major impact on health.

Assumptions about the causes of the loss of health influence the choice of form and target of intervention used to promote health and prevent disease and injury. Interventions used include education, engineering and enforcement strategies (Committee on Trauma Research, 1985). The target of intervention includes the individual, the community and the environment. Linder (1987), in his study of the injury problem in America, outlines four views about the causal agents and mechanisms of injury. The assumptions underlying these views determine the approach used to prevent their occurrence. Linder (1987) suggests that from the medical perspective, injuries are attributed to unhealthy lifestyle choices and faulty behaviour. The

individual, therefore, is made responsible for any untoward consequences of risk decision making. Prevention, from this view, involves patient education promoting healthy lifestyles or in cases where education fails, providing emergency treatment.

From the public health perspective, Linder (1987) suggests that injuries have much in common with communicable disease. As with treating communicable disease outbreaks, all susceptible individuals would be treated before the initial outbreak of the disease. The burden of prevention from this view falls on the community to ensure that its members are properly protected. Diseases from this view are seen to be caused by the transmission of pathogens or in the case of injury, kinetic or chemical energy from the environment via some agent or vehicle to the human host. Linder (1987) suggests that prevention interventions from this perspective focus on interrupting the transmission process by protecting the host, disarming the agent or by altering the environment. The individual's actions are not seen to be the sole cause of most injuries. The following simple story shows the complex set of factors that are seen to be the cause of disease and injury from the public health view.

> Why is Jason in the hospital?
> Because he has a bad infection in his leg.
>
> But why does he have an infection?
> Because he has a cut on his leg and it got infected.
>
> But why does he have a cut on his leg?
> Because he was playing in the junk yard next to his apartment building and there was some sharp, jagged steel there that he fell on.
>
> But why was he playing in a junk yard?
> Because his neighbourhood is kind of run down. A lot of kids play there and there is no one to supervise them.
>
> But why does he live in that neighbourhood?
> Because his parents can't afford a nicer place to live.
>
> But why can't his parents afford a nicer place to live?
> Because his Dad is unemployed and his Mom is sick.
>
> But why is his Dad unemployed?
> Because he doesn't have much education and he can't find a job.

> But why---? (Federal, Provincial & Territorial Advisory Committee on Population Health, 1999, p. vi).

This story shows that when one takes a public health view of the injury/disease problem the intervention is not as simple as changing the individual's behaviour. One must also consider the socioeconomic factors affecting the occurrence of disease and injuries. From the public health perspective the community as well as the individual is the focus of the prevention intervention. Prevention interventions target the socioeconomic and physical environment, as well as early childhood experiences and personal health practices.

The third view of the injury problem proposed by Linder (1987), is the legal view. This view "focuses on the role of common law in deterring injury to individuals, through complex rules for defining liability and ultimately assigning the risk of any losses that might occur" (p.285). The common law offers an indirect inducement for manufacturers or others engaging in high risk activities to exercise reasonable care. Injury, from this view, is a product of choices made by some party. The intervention sees linking potential harm to a responsible individual as more important than identifying hazards.

The economic view, the fourth view of the injury problem proposed by Linder (1987) suggests another prevention strategy. This perspective views injury as the outcome of an implicit trade off between the costs and benefits of prevention. The optimal level of injury (or disease) is one that minimizes the combined costs of prevention and injury. The individual is the locus of treatment but this view, rather than attributing injury that departs from the socially optimal level to individuals, attributes injury to the market's failings. Distorted incentives and faulty information are singled out as causes of injury rather than human error and bad judgement. From this perspective individuals are not restrained from taking risks once incentives are aligned so that no involuntary or uncompensated costs are imposed on others.

From his research and teaching in ergonomic psychology, skill acquisition, mass media messages and behaviour change and the psychology of risk taking, Gerald Wilde (1994) developed a "Risk Homeostasis Theory". This theory recognizes that people expect to receive benefits from engaging in a risk activity. The theory proposes that "in any activity people accept a certain level of subjectively estimated risk to their health, safety, and other things they value in exchange for the benefits they hope to receive from that activity" (p. 5). He suggests that people continually check the amount of risk they feel they are exposed to and compare this with the amount of risk they are willing to accept. They try to reduce any difference between the two to zero. If the level of subjectively experienced risk is lower that is acceptable, Wilde (1994) theorizes that people will engage in actions that increase their exposure to risk; if safer roadways are created people will drive faster in order to maintain a subjectively acceptable level of risk.

Prevention interventions proposed by Wilde (1994) focus on motivating people to adopt a safer level of risk using four tactics: increasing the perceived benefit of cautious behaviour, decreasing the perceived cost of cautious behaviour, increasing the perceived cost of risky behaviour and decreasing the perceived benefit of risky behaviour (p.183). Wilde's (1994) prevention interventions are similar to Linder's economic view of the injury problem which proposes that if the right incentives or disincentives are put in place individuals will choose safer levels of risk.

The previous studies show how assumptions regarding the cause of disease and injury determine the approach used to prevent their occurrence. These views of the disease and injury problem assume that individuals actively make a decision to engage in behaviours that put their health at risk. The public health perspective acknowledges that there may be socioeconomic factors that contribute to the choice of personal health practices. However, many of the education strategies continue to focus on the negative aspects of people's health choices in attempts to motivate people to eliminate the risk behaviour. The public is bombarded about the risks in almost every human activity: eating, drinking, smoking, engaging in sex, and being out in the

sunshine. People are advised to avoid high cholesterol foods, limit the consumption of alcoholic beverages, quit smoking, abstain from unsafe sexual activities and stay out of the sun. In other words, people are advised to eliminate the risk behaviour.

In a recent study by Fromme, Katz and Rivet (1997), a questionnaire was developed to assess outcome expectancies for the potential consequences of involvement in a variety of risk activities. They found that potential benefits were found to be more reliably associated with risk-taking than were beliefs about potential negative consequences. They suggest that rather than developing programs which focus on the negative aspects of the risk behaviour (unsafe sex, drug and alcohol use), it may be more effective to develop programs that could recognize the appeal of risk activities while encouraging steps toward minimizing the risks. They do not describe the steps toward minimizing risk or provide information on how these steps would be learned by the risk takers.

The HIV Transmission Guidelines (McClure & Grubb, 1999) also recognize that elimination of or abstinence from the risk activity is not possible for everyone, but the potential negative consequences of the risk activity can be decreased using risk reduction strategies. The Guidelines promoting these strategies assume that it is better to provide information about both options: reducing risk and eliminating risk, thereby allowing individuals to determine which choice is appropriate for themselves. The Guidelines, however, do not discuss how this knowledge is learned by risk takers.

The Canadian Injury Prevention Foundation provides a good example of how marketing strategies are used to change people's attitudes and behaviours. The foundation changed its name to the SMARTRISK Foundation, a name that more accurately reflects their mission: encouraging Canadians to be smart about risk and minimize their potential for injury and death (SMARTRISK Foundation, 1995). Their approach is different from the traditional safety messages, which are filled with a litany of "Don'ts". They propose that 'life is about taking risks' and any prevention message must carry a positive choice theme. The Foundation notes that there is a continuum of

risk. At one end of the spectrum are risks that none of us are willing to take, as the potential for loss is too high. At the other end of the spectrum there are risks that are taken so much for granted they are not even perceived as risks. The Foundation named the line that separates smart risk from stupid risk as The Stupid Line and developed a creative marketing campaign around this concept. Their programs target teens. The Foundation proposes that by socially sanctioning the word "stupid" teens are given a strategy that can easily be used when faced with peer demand to take a risk. The Stupid Line gives them the option to be in charge and exercise their ability to choose smart risks. It outlines incentives to encourage smart risk decision-making. The Foundation proposes five choices rather than rules for taking smart risks: 'look first,' ' wear the gear,' 'drive sober,' 'buckle up,' and 'get trained.' These strategies enable people to handle the risk and enjoy the benefits rather than eliminate the activity entirely.

Cadman's (1996) interdisciplinary study of ski injury prevention encompasses sports medicine, epidemiology, education, sociology and health promotion. The research includes two phases, a retrospective case series analysis of 2,139 injury events during the 1992 ski season and a 1993 prospective case series analysis of 540 injured alpine skiers and snowboarders in three age groups (0-6, 7-12, 13-17 years). The study employed ski patrol data and a specially designed questionnaire administered to over 800 skiers and 114 injured skiers. The study identified differences in patterns of injury in the different age groups and the different activities of snowboarding and alpine skiing. The study also revealed factors in the social and physical environments that influenced skiing behaviour. Personal error was cited as the leading cause of injury although Cadman (1996) suggests "the higher risk activities in skiing, such as skiing avalanche prone slopes or skiing the trees should not be condemned but tolerated" (p. 131). Like the SMARTRISK Foundation, Cadman (1996) proposes that "young people should be taught, encouraged and reinforced for adopting health promoting behaviours that will counter the higher risk activities in which they engage" (p. 131). The study acknowledges that behaviour is determined by the interactions of the person, the person's behaviour and the environment. Again,

the study does not address the factors that affect how the skiers learn the health promoting or risk-handling behaviours.

Yates's (1992) examination of studies concerning risk-taking behaviour notes that risk-taking in natural settings uses a mode of risk-handling behaviour. He also notes there are no models or even broadly descriptive data on this recently recognized type of behaviour and recommends risk-handling behavior as a high-priority research topic. A study of this risk-handling behaviour may provide insights that would aid in the development of programs that are based on the principles of harm reduction recommended by Fromme, Katz and Rivet (1997) and promoted by McClure and Grubb (1999) and the SMARTRISK Foundation (1995). It may also provide insights that will aid in teaching young people the risk handling behaviours that will counter their higher risk activities. This finding prompted a search of the adventure recreation literature, which concerns risk taking in natural settings.

Adventure Recreation Concept of Risk

Activities in a natural environment that involve risk to the participant have become more popular over the last decade. This phenomenon has prompted a variety of research studies by those involved in recreation seeking to increase the understanding of the complex nature of risk recreation and the factors which influence the enduring involvement of participants (Ewert, 1994; Ewert & Hollenhorst, 1989; Robinson, 1992; Schuett, 1991; 1993; 1994). From the adventure recreation perspective, risk is defined as a variety of self-initiated activities, which generally occur in natural environment settings, and which due to their always uncertain and potentially harmful nature, provide the opportunity for intense cognitive and affective involvement (Ewert & Hollenhorst, 1989; Robinson, 1992). The focus is on the positive aspects of risk situations.

The recreation literature has long recognized the benefits that can be achieved from participating in adventure recreation activities. Sparkes (1982), in his paper presented to the American Alliance for Health, Physical Recreation and Dance, states that participation in

adventure recreation activities has the potential for self-discovery, self-realization, and personal growth. Mortlock (1978), a Churchill Scholar and Director of the Centre of Adventure Education at Charlotte Mason College in the U.K., states that adventure is the most dynamic form of education. He reports that there are positive traits to be gained from participating in adventure recreation activities. These include an awareness of and respect for the environment, self-confidence, self-discipline, unselfishness, vitality, integrity, and humility (Mortlock, 1978). These would all seem to be benefits that promote health and well-being.

Those involved in adventure recreation acknowledge that people choose to participate in risk activities because of the benefits they hope to experience. From this perspective, strategies that seek to safeguard participants by altering the natural environment or regulating the actions of the individuals are seen to damage the risk experience (Ewert, 1989; 1994). This finding coincides with the views of Wilde's (1994) Risk Homeostasis Theory and Cadman's (1996) study. If participants are safeguarded from injury it is theorized they will engage in other actions that increase their exposure to risk. Rather than focussing on the negative aspect of the risk situation, adventure recreationists focus on the positive aspects of risk and seek to develop strategies that provide the best possible outdoor adventure recreation experience (Ewert, 1989). One assumes the best risk experience would not involve an injury; however, injury prevention is not addressed directly in the recreation literature.

Models have been developed to explain why individuals engage in outdoor adventure activities (Ewert & Hollenhorst, 1989; Schuett, 1991). These models seek information on the characteristics of the participants as well as information on the benefits the participants' desire from their engagement. Ewert and Hollenhorst (1989) tested the Adventure Model using university students from outdoor recreation classes who reported their experience in a variety of activities, including rock climbing, caving and wilderness canoeing. They found that as the engagement of the participant increased from introduction to commitment, the participants' motivation shifted towards more risk-taking, their locus of control became more internal, and

their social orientation shifted away from structured programs and groups to peer groups. They also found that as engagement increased, the participants sought a more natural environment, their perception of risk decreased and their level of skill and frequency of participation increased.

Schuett (1991) expanded the original Adventure Model to improve its explanatory ability for adventure recreation participation. In the revised model, the dependent variable was changed from engagement to enduring involvement, a concept believed to more effectively capture the personal meaning of recreational activities. The independent variables were skill, experience, psychological outcomes, sensation seeking, frequency of participation, environmental preference, social orientation, locus of control and risk perception, in addition to the socio-demographic variables of age, gender, income and education (Schuett, 1991, p. 94).

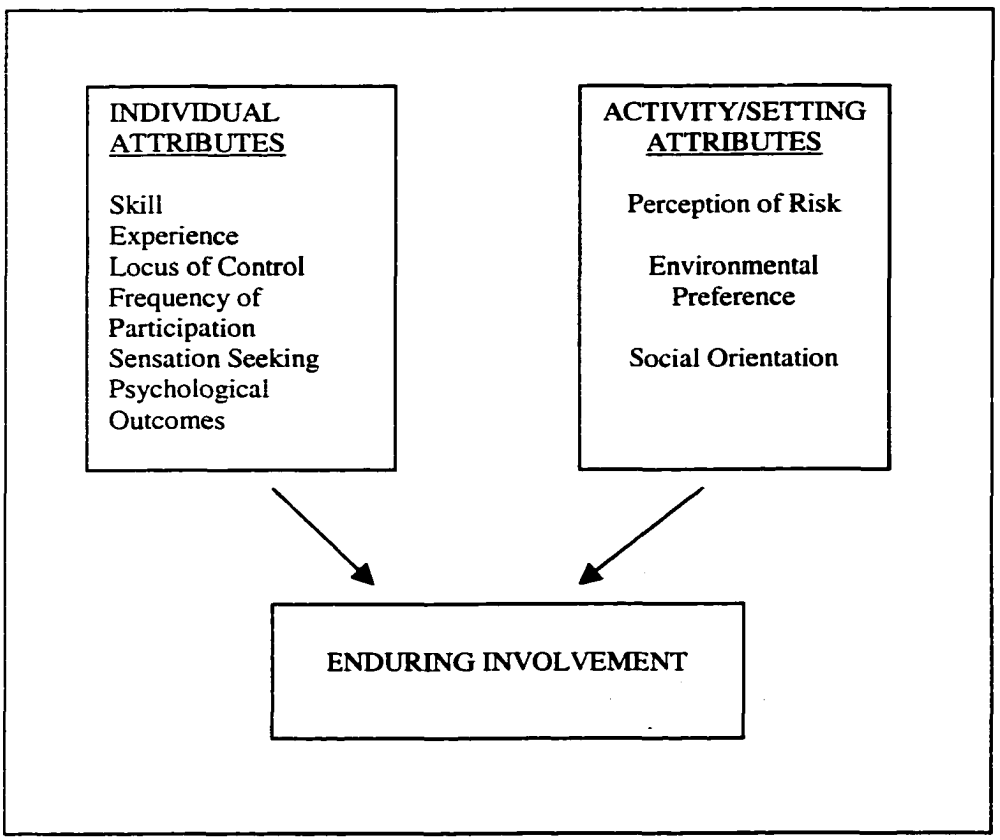

Figure 1. Schuett's Revised Adventure Recreation Model

The subjects in this study were 291 white water kayakers who had participated in a kayaking program and participated in kayaking in the year previous to the study. "Results from this study revealed that the needs and desires of white water kayakers are influenced by several variables, most importantly, skill level, age and gender" (p.207). These studies show how those involved in adventure recreation gain information about the characteristics and desires of the people who participate in adventure recreation activities. This information enables them to develop adventure recreation programs that provide opportunities for the participants to realize the benefits of a risk experience.

Schuett (1991) suggests that the information gained in his study has numerous implications for those involved in providing adventure recreation experiences including those in marketing and advertising/promotion. To offer effective programs he advises that staff must be trained about the needs and wants of the consumer. Schuett (1991) suggests programmers should consider offering courses by various age groups or programs exclusively for males or females. Offering opportunities for social interaction is another suggestion prompted by the research. Schuett (1991) notes that paddlers prefer the risk inherent in white water kayaking and suggests that instructors should try to make the course exciting but "always be cognizant of the risk activity in case a participant is experiencing anxiety or boredom." He stresses the importance of training staff in paddling skills and techniques as well as rescue training and risk management. Schuett (1991) also stresses the importance of human relations training to enable the instructors to understand more about the social interaction that takes place in an adventure recreation experience.

The adventure recreation literature shows that risk recreation or outdoor adventure recreation programs seek to maximize the benefits of the risk experience. Preventing injuries is a concern but what appears to be more important is providing opportunities for individuals to realize their own potential. The literature suggests that outdoor adventure recreation programs

seek to develop technical skills as well as risk handling behaviours. In order to develop participants' decision-making skills, the literature recommends low risk, structured learning environments for the novice participant. As skill and knowledge increase it is suggested that the participants be allowed the freedom and encouragement to make their own choices (Ewert & Hollenhorst, 1989).

The key to successful risk-taking, in which the benefits are realized while the potential losses are not, is matching skill level to the demands of the situation. Csikszentmihalyi (1990) developed a concept called the flow model to explain the pleasant, satisfying state experienced by an individual when skill level matches the challenge presented by an activity (Figure 2). When flow occurs, the individual is aware of the challenge, the goals are clear and the person feels he/she has the skills to achieve the goals. In this situation a merging between the activity and awareness occurs. Csikszentmihalyi (1990) states that there is no attention left to think of other worries or frustrations. All contents of consciousness are in harmony with each other. The person becomes part of a system of action greater than what they had before and experiences a sense of control over his/her actions. Sense of time is altered and concern for self or self-consciousness disappears. Csikszentmihalyi (1990) proposes that this loss of self-consciousness provides a chance to expand the concept of self. Flow experiences are proposed to be optimal experiences that force people to stretch themselves to take on other challenges, continually improving their abilities. Because flow experiences reaffirm the order of self and are so enjoyable, Csikszentmihalyi (1990) says people will attempt to replicate the experience whenever possible.

Enjoyable activities that produce flow can also have a potentially negative effect. Csikszentmihalyi (1990) says that when a person becomes so dependent on the ability to control an enjoyable activity that he cannot pay attention to anything else, he loses the ultimate control: the freedom to determine the content of consciousness.

Flow typically occurs in clearly structured activities in which the level of challenges and skills can be varied and controlled (Csikszentmihalyi, 1990). Csikszentmihalyi (1990) states that any possibility for action to which a skill corresponds can produce a flow experience. He also notes that no activity can sustain it for long unless both the challenges and skills become more complex.

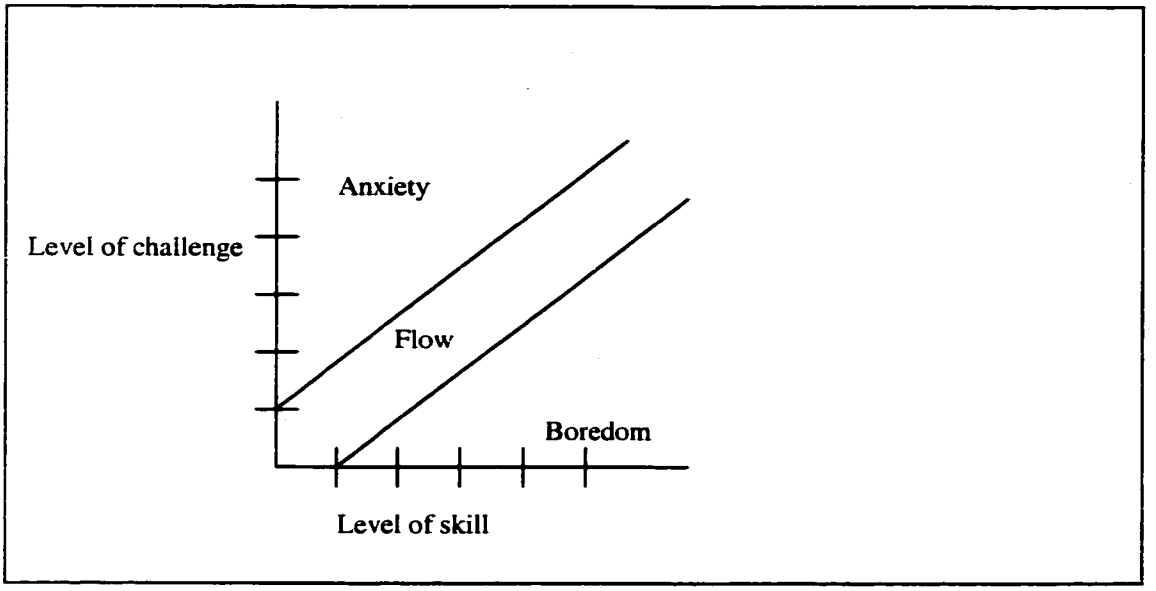

Figure 2. Csikszentmihalyi's Flow Model

Matching skills to the challenge depends on a subjective assessment. The person must be able to see the challenge in the activity and perceive he or she has the skill to master the challenge. If the person misjudges the level of challenge or skill, the activity produces anxiety or boredom instead of flow (Csikszentmihalyi, 1990). It would also seem that when skill level does not match the level of challenge in a sport such as white water kayaking the person would also be at greater risk of injury.

Both the health promotion and the adventure recreation literature perceive that people are making a conscious decision to engage in risk activities. Their strategies focus on influencing people's risk decision. In the adventure recreation literature, strategies promote the development of programs where individuals learn the skills and develop the experience to improve their risk decision-making abilities and thereby create optimal experiences: beautiful, extraordinary

moments. The more recent health promotion and disease/injury prevention literature also recognizes that people are choosing to engage in risk activities because of the anticipated positive benefits. Unlike the benefits of adventure recreation risk experiences, the benefits of health risk behaviours do not appear to provide opportunities for personal growth. They do, however, provide immediate pleasure for the individual. Some health promotion strategies focus on providing individuals with the skill and knowledge to determine which choice is right for them, the short or the long-term benefits. This contrasts with the traditional health promotion and disease/injury prevention approach in which strategies were developed to encourage individuals to change their behaviour based on the health care provider's decision that the right risk decision was the elimination of the risk activity. A more thorough understanding of factors involved in risk decision-making is needed to understand the decisions involved in implementing risk handling behaviours. The review now turns to the risk decision-making literature.

Risk Decision Making

A decision-making perspective on risk taking implies that the risk-taking behaviour is the result of a deliberate choice. Deliberative risk-taking has been studied extensively and has resulted in the development of decision theories and models of health behaviour discussed in the following section. Within these theories, beliefs of self-efficacy are seen to exert a major influence on decision-making. The role of these beliefs will therefore be discussed. A less recognized type of non-deliberative risk taking, in which the individual does not perceive the need for careful deliberation, or where the person does not see the risk that is acknowledged by others, is also examined.

Deliberate Risk Decision- Making

Deliberate risk decision-making suggests that a person makes a careful appraisal of the level of risk involved in a situation. Yates and Stone (1992) state that for a situation to be

considered risky, the risk appraiser must believe it harbours the potential for losses. Consequently, they propose that a major part of formal risk analysis is the identification of the potential losses. It was noted earlier in the discussion of the concept of risk that the construct of risk involves three essential elements: losses, the significance of those losses and the uncertainty associated with those losses (Yates & Stone, 1992). The risk appraiser must be able to identify all the elements of the risk construct.

Fischhoff (1992), in his study of decision behaviour, states that focussing on a limited portion of people's choices, the "risky outcomes", may be misleading. He points out that "in the eye of the behavers, these risks are the price paid to achieve (or at least have a chance at) some benefits" (p. 137). Consideration of the entire range of outcomes, both positive and negative, certain and uncertain is therefore necessary to provide a full account of a risky decision.

Yates and Stone (1992) discovered that people rely on relative frequencies, subjective reasoning and formal models to make their judgements regarding the possibility of loss. Neumann, a doctoral student in health economics and health decision sciences at Harvard University School of Public Health, and Politser, a mathematical psychologist interested in decision analysis and behavioural decision-making, note in their review of the risk decision-making literature that there are limits to human decision-making. They suggest that decision-making is affected by perceptions of controllability, voluntariness and castastrophic potential of the risk. Slovic (1987) says that these perceptions are in turn influenced by media coverage of accidents.

Weinstein's (1984) study of perceptions of risk factors and susceptibility found college students' views of their own actions and psychological attributes to be excessively optimistic. His results suggest that "people are unrealistic about their vulnerability to hazards perceived to be controllable at least in part because they are biased about the actions and psychological attributes that determine their susceptibility to such hazards" (p.439). Weinstein (1984) acknowledges that

as his data refers to young, generally healthy individuals, results may be found to vary with age, health or socioeconomic status.

Research psychologists Adler, Kegeles and Genevro's (1992) review of the literature on risk taking and health notes that responses to health threats do not always appear to be associated with a rational weighing of the actual harm. They state that this may be due to limited information- processing capacities which are exacerbated by the uncertainty associated with many of the potential risks to health as well as possible information overload. The uncertainty of health risks may be due to the fact that the positive consequences, as compared to the negative consequences, occur more frequently and tend to be paired more closely in time with involvement in risky activities. The pleasure experienced from smoking a cigarette today is certain while the fact one might develop emphysema or lung cancer in the future is less certain (Weinstein, 1987; Fromme, Katz & D'Amico 1997).

The above studies show that people have limited abilities to make risky decisions. Recognizing the possibility of human imperfection, decision analysts use many different models and decision-making techniques to help people make better risk decisions. The models can be distinguished by their topics: people's behaviour, the environments in which people act and the tasks people face in these environments. They can also be distinguished by whether they are descriptive or normative models.

Normative models of decision-making. These models specify the rules to be followed when making decisions. The models prescribe actions for people in tasks and specify conditions for the environment. A normative model of decision-making can predict correctly the behaviour of anyone who is willing and able to apply that model in making decisions (von Winterfeldt & Edwards, 1986). Subjective Expected Utility theory (Savage, 1954) is an example of normative theory. In this theory, the expected utility or value of an outcome as well as subjective measures of probability are given a numerical value. Using arithmetical tools, these values are aggregated to arrive at a meaningful decision. A decision tree is made and it is predicted that people will

choose the option with the largest subjectively expected utility. It is noted that both utilities and the probabilities that enter into them are numbers that are inherently subjective and would therefore be influenced by the factors previously discussed. These factors are not considered in normative theories. Decision analysts von Winterfeldt and Edwards (1986) assert, "the larger and more important the decision, the more likely is the decision maker to calculate carefully the potential consequences of each act and try to make the normatively correct decision" (p.16). A set of normative decision-theoretic models together with the techniques for applying them are usually called decision analysis (von Winterfeldt & Edwards, 1986). Methods of decision analysis are usually reserved for the hard decisions of government and business.

Descriptive models of decision-making. These models examine how people actually make decisions and from these observations attempt to predict what people do. Von Winterfeldt and Edwards (1986) state that every descriptive model in psychology contains two parts. One is a description of the environment and task facing the organism; the other is a description of the basic response tendencies the organism brings to that environment and task (p.16). It is the interplay between these two kinds of descriptions that produces predictions about the behaviour of the organism.

Developmental perspective of risk decision-making. When people fail to make a wise risk decision, it is attributed to a lack of intellectual skills, a lack of knowledge or a failure to use their skill and knowledge effectively. From this cognitive perspective Fischhoff (1992) states, "all things being equal, people should become more proficient at risk taking as their cognitive skills and knowledge improve over their life span" (p.138). He offers a developmental perspective of risk decision-making, which focuses not only on the development of people's cognitive resources but also on the development of their affective and social resources. This developmental perspective addresses factors involved in decision making excluded by normative theory. Fischhoff (1992) reviews studies that address the specific processes of cognitive development, how people think about the world; affective development, how people feel about

the world; and social development, the role that others play in people's choices as they relate to risk taking. His findings indicate, "Decision makers' thinking may depend on their cognitive capacity, their beliefs and their skills (for manipulating those beliefs within the constraints imposed by their capacity)" (p. 156). Fischhoff (1992) states that this thinking goes on against the backdrop of affective and social pressures whose management requires additional skills. He suggests that when studying risk behaviours one must see the development of risk decisions as being made against the background of the general development of their cognitive, affective and social resources. These resources are all affected by beliefs of self-efficacy.

Role of Beliefs of Self Efficacy in Decision-Making

Beliefs of self-efficacy (the belief that one can execute a given level of performance) are also developed against the background of the general development of people's cognitive, affective and social resources (Bandura, 1990). Bandura (1990) suggests that much of the research on human decision-making may not provide a sufficient basis for developing either descriptive or normative models of decision-making in dynamic naturalistic environments. Bandura (1990) is unique among social psychologists in his understanding of the dynamic nature of decision-making in the real world environment. He describes naturalistic environments as those environments "which involve repeated judgements in the face of a wide array of information, within a continuing flow of activity, under time constraints, and social and self-evaluative consequences" (p. 134). Bandura's description would appear to fit the decision-making environment of white water kayaking. It also captures the environment of our everyday lives where most of our risk decisions are made.

Bandura (1990) provides information on the powerful influence of beliefs of self-efficacy in regulating behaviour. He distinguishes between self-efficacy and the more familiar term confidence. He asserts that the term confidence is limiting, as it refers to a belief in one's abilities, but does not specify the direction of the belief. Bandura (1990) suggests that one can be

confident that he/she will fail at an endeavor, as well as confident that he/she will succeed. In his review of the literature and discussion of his own research on the effects of beliefs of self efficacy, Bandura (1990) suggests that self-efficacy beliefs regulate behaviour through four types of processes: cognitive, motivational, affective, and selection.

Cognitive processes. Bandura (1990) asserts that self-efficacy beliefs affect thought patterns that can enhance or undermine performance. Those who have a high sense of self-efficacy visualize success scenarios that provide positive guides for performance while those lacking a high sense of self-efficacy visualize failure scenarios that decrease performance. In Bandura and Wood's (1989b) research, individuals managed a computer-simulated organization. The structure of the social cognitive theory was tested in conjunction with experimentally varied organizational properties and belief systems that had the potential to enhance or undermine the operation of self-regulatory determinants.

One belief system concerned conceptions of abilities. Bandura and Wood (1989 b) found that the managers who viewed decision-making abilities as reflecting basic cognitive aptitude were beset with increasing self-doubts about their managerial efficacy as they encountered problems and as a result their performance declined. In contrast those managers who viewed decision-making as an acquirable skill exhibited a highly resilient sense of personal efficacy when faced with problems, seeing the problems as an opportunity to expand their knowledge. Bandura and Wood (1989b) also examined the effect of people's beliefs about the extent to which the environment is controllable. Those who managed simulated organizations under the belief that the organization was not controllable lost faith in their decision making abilities while those who viewed the environment as controllable displayed a strong sense of managerial efficacy.

The study showed that when initially faced with managing a complex, unfamiliar environment, people relied on their past performance in judging their efficacy and setting their personal goals. As they began to form a self-schema concerning their abilities, their actions in future performance experiences were influenced more by perceptions of self-efficacy and through

the effects of these beliefs on personal goal-setting and analytical thinking. Bandura and Wood (1989b) conclude that personal goals enhance performance attainments through the mediation of analytic strategies.

Bandura and Wood's (1989b) study also examined the effects of social comparisons on people's judgement of their self-efficacy and their personal goal-setting. They found that when people saw themselves surpassed by 'similar social referents' their perceived self-efficacy was undermined and their performance deteriorated. Seeing oneself gain mastery, however, strengthened a sense of personal efficacy and increased performance.

Motivational processes. Beliefs of self-efficacy operate on all forms of cognitive motivators: causal attributions, outcome expectancies and cognized goals (Bandura, 1990). Bandura (1990) suggests that causal attributions and self-efficacy appraisals involve bidirectional causation. The relative weight given to available information about the situation affects self-efficacy appraisal and the effects of causal attributions on performance attainments are in turn mediated through beliefs of self-efficacy. He asserts that expectancy motivators are governed by the value placed on the outcomes as well as the expectation that particular actions will produce specific outcomes. For many activities, outcomes are determined by level of competence. Therefore, the types of outcomes people anticipate depend largely on their beliefs in their abilities. In most situations, people who judge themselves highly efficacious will expect favourable outcomes whereas those who judge themselves lacking in ability will expect unfavourable outcomes (Bandura, 1990). Beliefs of self-efficacy affect goal intentions as it is partly on the basis of self-efficacy beliefs that people choose what challenges to take, how much effort to expend in the endeavor, and how long to persevere in the face of difficulties (Bandura, 1986; 1988a). When faced with obstacles, people who doubt their abilities slacken their efforts or abort their attempts while those with strong beliefs in their abilities exert greater effort to master the challenge. Bandura (1990) suggests, "By making self-satisfaction conditional on matching

adopted goals, people give direction to their actions and create self-incentives to persist in their efforts until their performances match their goals" (p.142).

Affective processes. Beliefs of self-efficacy affect how much stress and depression people experience in threatening or taxing situations (Bandura, 1990). People who believe they have the ability to control potentially threatening situations are not anxious or fearful, whereas those who believe they cannot control the situation experience high levels of anxiety arousal. Bandura (1990) states that perceived coping ability regulates avoidance behaviour in risky situations suggesting that the stronger the perceived coping self-efficacy the more venturesome the behaviour.

Selection processes. People can exert some influence over their lives by the environments they select as well as the environments they create. Bandura (1990) proposes that people may choose to avoid activities and situations they believe exceed their coping capabilities but they may readily choose to participate in social environments and situations they judge themselves capable of handling. Bandura (1990) cites studies that note "the stronger people's self-beliefs in their capabilities, the more options they consider possible, the greater the interest they show in them, and the better they prepare themselves for different pursuits" (p.151). It was shown earlier that effective decision analysis involved identifying all the options in a risk situation. This would indicate that strong beliefs of self-efficacy would enhance one's decision-making abilities.

Bandura (1990) provides suggestions for the development of strong beliefs of self-efficacy. He suggests the most powerful means of developing strong beliefs of self-efficacy is through mastery experiences. Bandura (1990) cautions against placing people prematurely in situations where they are likely to fail. He also acknowledges that if people experience only easy success they learn to expect quick results and their efficacy beliefs are easily undermined by failure. Set backs can serve a useful purpose, teaching that success requires sustained effort. Bandura (1990) sums up the development of efficacy beliefs stating they are "the product of a

complex process of self-persuasion that relies on cognitive processing of diverse sources of efficacy information conveyed enactively, vicariously, socially, and physiologically" (p. 157). The importance of consideration of the effect of efficacy beliefs on behaviour is acknowledged in the following health belief models.

Several models have been developed specifically to account for the likelihood that individuals will engage in health promoting, disease/injury preventing behaviours. The Health Belief Model (HBM) was developed in the early 1950's by a group of social psychologists in an attempt to understand why people fail to accept disease preventives or screening tests for the early detection of asymptomatic disease (Janz & Becker, 1984). The refined Health Belief Model (Rosenstock, 1974) provides an important framework for studying the extent to which individuals accept recommendations regarding health care and act on them. The dimensions of the model include the perceived susceptibility of the individual to a certain disease or injury; the perceived seriousness of that disease or injury; the perceived benefits of taking the preventive action; and the perceived barriers to taking the preventive action. The early applications of the HBM dealt with fairly simple preventive behaviours while current uses of the model investigate the relationship between health beliefs and the more complex preventive behaviours involved in complying with current medical regimens. Rosenstock, Strecher, and Becker (1988) suggest that the addition of perceived self-efficacy to the HBM may help to explain the variance in health related behaviours previously unaccounted for by the model.

Protection Motivation Theory (Rogers, 1975) proposes that a fear appeal communication initiates cognitive appraisal processes in a person, whereby the person assesses the probability and severity of the event, as well as the efficacy of the preventive behaviour. The cognitive appraisals mediate the effects of the fear appeal by arousing protection motivation, an intervening variable that arouses, sustains, and directs activity to protect the person from danger. A revision of this theory (Rogers, 1983), like revisions of the HBM, attempts to offer a more comprehensive theory by incorporating Bandura's (1977) Self-Efficacy theory. In the revised theory, a person's

belief that a given behaviour will or will not lead to a given outcome and their belief that they are capable of performing the particular behaviour is proposed as another cognitive mediating process that arouses protection motivation. Other studies showing that the most powerful predictor of behavioural intentions is self-efficacy expectancy (Maddux & Rogers, 1983) and high self-efficacy, along with conditions of high threat, high response and higher levels of beliefs about the health benefits (Rippetoe and Rogers, 1987), confirm the importance of considering these beliefs when studying risk-handling behaviour. Maddux and Rogers (1983) reinforce the importance of considering both positive and negative outcomes in risk decisions. They note that the protection motivation theory is limited by its emphasis on the negative events associated with risk decisions and suggest that shifting the emphasis to include consideration of positive outcomes would increase the range of the theory's applicability.

These models acknowledge the complex nature of risk decision-making and identify some of the individual and situational factors that influence the risk decision. As stated earlier all of these models imply that risk-taking behaviour is the result of a process of careful deliberation. In contrast, Wagenaar (1992), in his study of the research on risk-taking and accident causation, found that a large majority of our everyday actions, which may include risk-taking behaviour, are automatically controlled and do not involve conscious decision-making.

Non-deliberative Risk Decisions

In the previous discussion on deliberative risk decision-making, it is assumed that persons undertaking a risk consciously and deliberately consider the risk involved. The risk taker has to receive the relevant information and recognize the situation as being risky. Wagenaar (1992) states, "there can be no risk taking without awareness of a problem" (p.274). In his research, choosing the risk option was shown to involve investigation of the available choices, their possible consequences and the attached value of those consequences. It was also shown to involve employing a process by which the risks and benefits were compared and accepted or

rejected. Failure to make an effective risk decision was seen to be due to a lack of skills and knowledge or failure to use the skill and knowledge effectively. Risk decisions were also shown to be influenced by beliefs of self-efficacy.

Wagenaar's (1992) review of accident histories found that in 83% of the cases, errors were not the result of a calculated acceptance of risk. In some cases the risks were not calculated because there was a lack of information about the risk situation; in other cases the information was available but the situation was not regarded as risky. There were cases where individuals involved failed to consider other alternatives or under-estimated the possibility of disaster. The individuals did not recognize a need for careful deliberation or they did not see risk acknowledged by others.

MacCrimmon and Wehrung (1986) suggest that a person's response to a risky situation involves several stages that may interact, but which reflect different psychological processes. They propose that the recognition and evaluation of the risk situation may occur automatically or may be the result of conscious deliberation. Wagenaar (1992) discusses the different psychological processes, which reflect levels of operation that were identified by Van der Molen and Boetticher (1988) and Rasmussen (1982; 1983). In his discussion he combines the three levels of operation identified. The bottom level he equates with Van der Molen and Boetticher's (1988) operational level or Rasmussen's skill-based behaviour. This level describes the person's ongoing or routine behaviour during the actual activity. Wagenaar (1992) states that risk evaluation is absent at this level. In the middle, tactical or rule-based level of operation he proposes that any decisions made result from rule-following behaviour rather than a process of careful deliberation. Conscious problem solving occurs only at the top, strategic or knowledge-based level of operation. Wagenaar (1992) asserts that at this level, rules guiding behaviour are created and adapted. Individuals who operate at the bottom level, the skill based level of operation, are running risks rather than making a deliberate decision to take a risk (Wagenaar, 1992). Wagenaar (1992) links these levels of operation to levels of management and suggests

intervention strategies, rather than targeting the person on the shop floor, should instead target those at the top level of management. He implies, "most activities are executed at the bottom level of automated behaviour where there is simply no room for consideration of risks" (p.279). Wagenaar (1992) does not mention whether or not these levels of operation are situation specific.

Pitz (1992), a research psychologist, suggests that there are two sides to automatic behaviour. On the one side, automatic behaviour reflects habits acquired through the routine activities of daily life. On the other side, automatic behaviour is also an important characteristic of skilled behaviour: an activity practiced to the point one becomes an expert. He states that skill in this context includes not only motor performance but also cognitive skills, which include problem solving. These automatic forms of behaviour reflect long-term learning processes and familiar environments. The Dreyfus Model of Skill Acquisition (Dreyfus & Dreyfus, 1986) describes the different types of decision analysis that occur as one moves from a novice skill level to an expert level. Dreyfus and Dreyfus (1986) propose that the expert's perception of the situation as well as their decisions happen intuitively without conscious deliberative decision-making. However the whole situation is still analyzed, the risks are still identified and options for response are determined. MacLeod (1996) in her study of experience in everyday nursing practice states the excellent, experienced nurses notice, understand, and act virtually simultaneously. The processes are inextricably intertwined. The stages of skill acquisition are discussed more fully in the next section.

Pitz (1992) states that behaviour in risky situations involves recognizing and evaluating risk, as well as responding to risk. Both types of decision making need to be considered when attempting to influence behaviour. Those involved in health promotion and disease/injury prevention and those involved in adventure recreation focus on the individual and seek to influence or improve his/her decision-making abilities.

The discussion of risk decision-making shows that the development of decision-making abilities must be seen against the general development of cognitive, affective and social

resources. The discussion also revealed that in deliberative risk decision-making the assessment of potential losses and expected benefits and skill level depended on a subjective assessment. This assessment was therefore affected by one's previous experiences. Beliefs of self-efficacy were also affected by previous experiences. This study now turns to the experiential learning literature to explore more fully the role of experience in the development of decision-making abilities, beliefs of self-efficacy, and cognitive, affective and social resources. It is this literature that provides the background knowledge from which to view the kayakers' learning experience.

Experiential Learning

To understand the learning experience of white water kayakers, we need to look at four aspects of experiential learning. The section begins by examining the stages of skill acquisition as described by Dreyfus and Dreyfus (1986). These stages involve qualitatively different modes of decision-making an individual passes through as expertise is acquired. Movement through the stages is affected by the nature of the experience. Experience takes many forms and each affects learning differently. The forms of experience and their effect on learning are noted. The fourth aspect of experiential learning discussed concerns the manner in which individuals engage in the social practice that entails learning.

A range of experiential learning models developed from deliberative learning situations in which the learners are aware they are learning exists: e.g., Lewin (1952), Kolb (1984), Boud, Keogh and Walker (1985), and Argyris and Schön (1974). There are three common elements in these experiential learning models. The 'experience' is viewed as the source and testing ground for learning. Learning is the focus of the models, the learning which restructures perceptions of situations and oneself (MacLeod, 1996). The models show the experience of learning to be cyclical in nature, each learning experience influencing the next. We begin with a look at the stages of skill acquisition to determine the quality of learning that takes place through experiencing.

Stages of Skill Acquisition

Insights into thinking and decision-making skills have been gained by studying the contrast between the knowledge and skills of experts and novices. It has been suggested by studies in cognitive psychology that what distinguishes expert performance is "rapid access to an organized body of conceptual and procedural knowledge" (Glaser, 1987). This process of decision-making and the nature of the rapid access and knowledge used have been the focus of studies of clinical judgement in nursing (LeBreck, 1989; Tanner, 1983; 1987). Conventional approaches of statistical modeling and information processing have been found to be of limited usefulness in describing clinical judgement in natural settings because practical knowledge and the influence of the context have been overlooked (Tanner, 1987).

The Dreyfus Model of Skill Acquisition (Dreyfus & Dreyfus, 1986) offers another approach. The Dreyfus Model was first developed during studies of airline pilots and chess players and extended to the study of automobile drivers and adult learners of a second language. It is unique in its emphasis on the practical nature of knowledge inherent in expertise and the importance of experience in the development of that knowledge. The Dreyfus Model proposes that as people gain skill in a particular area they pass through five stages of qualitatively different modes of decision making. There are three dimensions to the development of expertise. One moves: (a) from using abstract principles to assess the situation, to using past experiences as a base for decision-making; (b) from identifying the various relevant facts and features of a situation to create a whole picture, to being able to immediately grasp the whole picture without first identifying the relevant facts; and (c) from being a detached decision-maker, to one who is emotionally involved and feels responsibility for the decision. A more detailed explanation of the five stages follows.

Level 1. Novice. The novice learns to recognize relevant facts and features of the situation that lead to the development of rules for determining action. These rules are "context free" and recognized without reference to the overall situation in which they occur.

Level 2. Advanced Beginner. After considerable experience the learner is able to recognize specific elements of the overall situation but in complex situations is unable to prioritize the specific elements. Actions follow learned rules and procedures.

Level 3. Competent. A competent performer begins to adopt a hierarchical procedure of decision-making. Competent performers are able to see the whole picture. The importance of relevant facts may depend on the presence of other facts. At this point of knowledge acquisition competent performers feel responsible for their decisions and emotionally involved in the outcome. Successful as well as disastrous outcomes leave a vivid memory of the situation and chosen option.

Level 4. Proficient. The behaviour of the proficient performer bears no resemblance to the slow detached reasoning of the novice performer. The proficient performer is able to intuitively grasp and organize the whole situation without decomposing the situation into its component features. Dreyfus and Dreyfus (1986) call this process "holistic discrimination". This is knowledge "know how". The proficient performer, although able to intuitively understand the situation, resorts to rule-based analysis to produce decisions.

Level 5. Expert. The expert no longer relies on rules to link the recognition of the whole to the appropriate action. The expert's perception of the situation as well as their decisions and actions happen intuitively. There is no conscious deliberative decision-making. Their assessment of the situation and resulting decision and action happens unconsciously, automatically and naturally. Experience enables the expert to recognize and understand new situations as similar to previous situations and to simultaneously recall the associated decision and action. Responding to the situation intuitively results in the rapid, fluid, involved kind of behaviour, which characterizes the expert.

Dreyfus and Dreyfus (1986) state that interpretive ability--being able to recognize what is important in a situation--constitutes judgement. The movement from a novice's dependence on "context free" rules to guide actions to the intuitive understanding, which guides the behaviour of the expert, is the core of the Dreyfus Model. This intuitive judgement (understanding without a rationale) has six key components: pattern recognition, similarity recognition, commonsense understanding, a sense of salience, skilled know-how and deliberative rationality. Schempp (1997), in discussing the development of expertise in teaching and coaching, acknowledges that experts using these six components of intuitive judgement, quickly extract meaningful chunks of information from often confusing and complex activity, predict the next series of events and plan an appropriate course of action.

The levels of skill development discussed are situation specific and as such do not describe people but rather stages of performance (Dreyfus & Dreyfus, 1986; Benner, 1984). Dreyfus and Dreyfus (1986) suggest that people move from one skill level to another through the accumulation of an "immense library of distinguishable situations" which is built up on the basis of experience (p. 32). They further suggest that people make a qualitative jump between stages rather than progress in a linear fashion. The nature of experiences and the process through which they are accumulated are unexplored by Dreyfus and Dreyfus (1986).

Process of Movement through the Stages

Learning or moving through the stages of skill acquisition can be a sudden or gradual process. The Dreyfus Model addresses the process of reflection maintaining that with experience the process of reflection changes from "calculative rationality": objective, distanced and analytical, to "deliberative rationality": involved, synthetic and perspective-changing (Benner & Tanner, 1987). In deliberate rationality, the differences in the situation are considered to account for the differences; the overall plan is the focus, while issues that arise as the plan is played out are noticed; a change in perspective is experienced so that new issues arise; the relevance and

adequacy of past situations which seem to underlie a current situation are considered (Dreyfus & Dreyfus, 1986). Dreyfus and Dreyfus (1986) propose that for learning to occur a part of the mind must remain aloof, monitoring.

In a study exploring the everyday experience in nursing practice, MacLeod (1996) found that learning is not only the result of some particularly meaningful experience but that it accompanies all experiencing. MacLeod (1996) suggests that rather than being a static entity as previously described, the ongoing practice (the everyday experience of the experienced, excellent nurses) involves a continuous interplay of the past, the present and the future, linking experience to ongoing practices and through them with time. The nurses learn whether they intend to or not; it is a part of experiencing nursing practice. MacLeod (1996) suggests that it is the nurses' practice of noticing which "produces an opening of possibility which allows for the movement in experience" (p.58). Learning accompanies changes in noticing, understanding and acting. In addition, learning is made possible by noticing, understanding and acting. MacLeod's (1996) study suggests that experience is more complex than it is usually portrayed in the research literature. A closer examination of the nature of experience follows.

The Nature of Experience

Studies that focus more directly on the nature of experience present a more dynamic view of experience. In MacLeod's (1996) study two ways of understanding experience emerged. In one understanding, experience is a resource or entity, something to be gained. Experience is also understood as an ongoing process, a process of experiencing. MacLeod (1996) suggests that the two are intertwined. The process of experiencing is not separate but "in continual interplay with the experience in the sense of a resource growing out of, informing and being changed by the process of experiencing" (MacLeod, 1996, p. 58).

MacLeod identifies three different types of experiences: watershed experiences, resonant experiences and bits & bobs. Watershed experiences are often first-time instances, which are

emotionally charged, highly memorable and vividly recounted. In MacLeod's (1996) study these experiences were specifically meaningful for the nurses and resulted in a significant alteration in their understanding. Resonant experiences are less emotionally laden, often taking place over a longer period of time and result in a gradual change in self-understanding. MacLeod (1996) suggests that these experiences may be the result of an accumulation of taken-for-granted experiences. Often the resonant experiences were less coherent and needed prompting to be recalled. The majority of experiences identified by MacLeod (1996) were 'bits & bobs'. These are the taken-for-granted experiences that happen all the time in the nurses' ongoing practice. The experiences are often forgotten soon afterwards and are not considered important enough to talk about or they are recounted in an even, emotional tone. MacLeod (1996) suggests that even though experience takes many forms, characteristic of all is the involvement of the nurses, which allows them to grasp the meanings inherent in their practice and experiences with patients and others.

The Social Aspect of Learning

The involvement or the participation of individuals in communities of practice is the focus of Lave and Wenger's (1991) study. They explore apprenticeship in five communities of practice: midwives, tailors, quartermasters, butchers, and non-drinking alcoholics and present a different approach to learning. They suggest that learning is an integral part of generative social practice in the lived-in world. Rather than focussing on the nature of the learning experience they examine the nature of engagement of individuals in the experience. Their study focuses on the relationship between learning and the social situations in which it occurs, proposing that one acquires the skills to perform by actually engaging in the process under the attenuated conditions of legitimate peripheral participation. Learning is a process that takes place in a participation framework, not in an individual mind. The different perspectives held by the coparticipants, therefore, mediate the learning. Learning through legitimate peripheral participation takes place

no matter which educational form provides a context for learning or whether there is any educational form at all (p. 40). The important point of learning is one of access to practice as a resource rather than instruction. A training program that consists of instructional settings separated from actual performance would tend to split the learner's ability to manage the learning situations apart from his or her ability to perform the skill.

The importance of access to practice as a resource is supported by a study researching teaching in physical education (Silverman, 1991). Silverman's findings indicate that in addition to providing clear explanations and demonstrations, teachers who allocate time for motor skill practice and structure practice so the students are appropriately engaged will promote student learning (p. 357). A paper by Latham and Cassady (1997) outlining the skills which are integral to the process of performance analysis reports that the individual's skill knowledge base and their ability to analyze effectively will only develop with relevant practical experience and practice.

In order to be engaged in the learning and to move into positions of full participation, Lave and Wenger (1991) state that learners must be legitimate peripheral participants in ongoing practice. Conditions that place newcomers in adversarial relations with masters, in exhausting conditions or in involuntary servitude rather than participation, distort the prospects for learning in practice (p. 64). The legitimate peripherality of the learners, rather than being an "observational" lookout post, crucially involves participation as a way of learning. An extended period of legitimate peripherality provides learners with opportunities to create their own culture of practice. From a broadly peripheral perspective, the learners gradually assemble a general idea of what constitutes the practice of the community. This might include how the masters and others conduct their lives, how people who are not part of the community interact with it, what other learners are doing, and what the learners need to learn to become full participants. Legitimate peripheral participation, in this manner, offers models which motivate learning.

Lave and Wenger's (1991) study has increased awareness of the social nature of experiential learning. The findings of this study are supported by a study concerning the

construction of scientific knowledge in the social setting of the classroom (Driver, Asoko, Leach, Mortimer, & Scott, 1994) and by a study using discourse analysis to change physical education (Prain & Hickey 1995). Driver et al. (1994) propose that scientific knowledge is socially constructed, validated and communicated in the social interaction within the everyday culture of the learning environment. Individuals build up knowledge by actively engaging with others in attempting to understand and interpret the phenomenon for themselves. The critical feature of this process of learning is the nature of the dialogic process. Driver et al. (1994) suggest that there are two components to the role of the instructor in this process. The instructor must introduce new ideas and then provide the support and guidance for students to make sense of these ideas for themselves. The instructor must also listen and diagnose the ways in which the instructional activities are being interpreted to inform further action. In this way the instructor too, becomes a learner. The model of discourse analysis proposed by Prain and Hickey (1995) also highlights the importance of exploratory verbal interaction and nondidactic approaches to encourage clarification and consolidation of student learning (p.88).

In this section we have discovered the complex nature of experiential learning. As MacLeod (1996) states, "Learning is much like the wind. It is impossible to grasp but its presence and influence are unmistakable" (p. 116).

Summary and Conclusions

In this chapter, three bodies of literature have been reviewed: the concept of risk, risk decision-making and experiential learning. The concept of risk was seen to be understood differently by those involved in health promotion and disease/injury prevention when compared with the understanding of those involved in adventure recreation. The differences in their understanding of risk led to differences in their response to risk behaviours and risk situations. Those in health promotion saw risk situations and behaviours as causing a loss of health and developed strategies to eliminate the behaviours and situations, while those in adventure

recreation saw risk situations as opportunities for personal growth and developed strategies to provide the optimal risk experience.

It is widely acknowledged that socioeconomic and environmental factors as well as individual life style choices affect one's health; however, many of the strategies used by those in health promotion were seen to focus on the individual. The more recent health promotion and disease/injury prevention strategies recognize that people choose to engage in health risk behaviours because of the expected benefits. These more recent strategies, instead of focussing on eliminating the behaviour, seek to reduce the harm by developing effective risk-handling behaviours. The review discovered a lack of information on risk-handling behaviour and how this type of behaviour is developed. The literature recommends it as a high priority research topic (Yates, 1992).

There is a substantial amount of adventure recreation literature that describes a holistic approach to risk situations, taking into consideration the natural and social environment as well as the individual. Adventure recreation models provide information on the characteristics of the individuals and explore the personal meaning of the participant's experience. Information obtained from these models furnishes suggestions for the development of programs and strategies to provide the optimal experience. Specific strategies focus on the development of skills, including risk decision-making skills. The strategies include many of the conditions Csikszentmihalyi (1990) considered necessary to experience flow and thereby to experience personal growth.

All the theories of risk decision-making explored showed that when people identify the possible losses in a situation, and assess the significance and the probability of those losses, it is based on a subjective appraisal. The assessment of expected benefits of the risk activity and the benefits of implementing risk-handling behaviours are also based on people's subjective appraisal. One of the most important factors influencing this assessment was shown to be beliefs of self-efficacy. The literature discussed the ways in which decision-making abilities and beliefs

of self-efficacy were developed. Both discussions noted the influence of previous experience on the development of these abilities and beliefs. Ideal developmental situations were shown to involve matching skill level to the challenge, thereby providing opportunities for mastery experiences. The discussions also noted that the development of these beliefs and abilities takes place against the background of the general development of cognitive, affective, and social resources.

Various emotions are mentioned throughout the literature: fear, heightened arousal, exhilaration, camaraderie, self-efficacy, boredom and anxiety. These emotions were seen to affect risk decision-making and were in turn affected by the risk decisions. What you don't see in the literature, however, is the individual and situational factors underlying these emotions. The approach used in this study enables us to see these factors, increasing our understanding of risk decision making.

A non-deliberative type of decision making was also discussed. This method was shown to involve two different processes. In one instance the decision-making was shown to be an important characteristic of skilled behaviour, which included not only performance, but also cognitive problem solving skills. This type of decision-making was shown to be situation specific, reflecting long term learning processes and familiar environments. The other type of non-deliberative decision making was shown to reflect habits acquired through the routine activities of daily life. What is not known is how they show up in risk taking behaviour. Both deliberative and non-deliberative forms of decision making need to be considered when we look at the risk decisions of the white water kayakers.

In the experiential learning literature the various stages of skill acquisition, which reflected qualitatively different modes of decision-making, were discussed. In the literature it was noted that there was a continuous interplay between present and past experiences which in turn affected future experiences. The nature of these experiences was shown to affect the movement through the stages. Following 'watershed' experiences, movement through the stages

of skill acquisition was accelerated; however, even in the 'bits and bobs' experiences of everyday life, learning continued. Learning was not only the result of some particularly meaningful experience but accompanied all experiencing. Experience was understood in two ways: as a resource and as an ongoing process, both inextricably intertwined. Key to all experiential learning was the involvement of the participants. What is needed is an examination of the role of experience in the development of the white water kayakers' risk-handling behaviours.

The review examined the nature of involvement of individuals in the experience. It was noted that one acquires the skills to perform by actually engaging in the process under conditions of 'legitimate peripheral participation'. This method involves participation as a way of learning and involves the participant in the culture of the community. The participants learn by engaging with others in attempting to understand and interpret the phenomenon for themselves. In this way the participants were shown to assemble a general idea of what constitutes the practice of community. It was shown that conditions that place the participant in adversarial relations with masters or in conditions of involuntary servitude distorted the prospects for learning. We need to look at the nature of involvement of the white water kayakers in the process of learning. This information may provide suggestions for engaging other people in learning behaviours that will improve their health and prevent injury.

The focus of this study is on the risk handling behaviour of white water kayakers. The search of the literature exposed a need for situational analysis of risk behaviour to better understand the role of individual differences. Risk-handling behaviour has also been identified in the literature as a high priority research topic. It is the intent of this study to examine learning in white water kayaking in depth and in so doing address these gaps. This examination will allow us to more fully capture the nature of risk decision-making in the natural environment. In the next chapter the approach to the study is discussed.

CHAPTER 3

Approach to the Study

My objective in undertaking this project was to gain insight into the risk-handling behaviour of white water kayakers. Behaviour was noted in the literature review to be determined by the interactions of the person, the person's behaviour and the environment. It was therefore my intent to enter the cultural environment of white water kayakers as a means of gaining insight into their risk handling behaviour. Cadman (1996), who also looks at preventing injury in high risk sports, says that most of the emphasis in injury research has been on injury epidemiology and equipment design. What is lacking in this field, he states, is information on the sociological factors influencing behaviour and the psychological factors that affect one's proclivity to engage in high-risk behaviours. As the purpose of my research was largely exploratory, an inductive approach was chosen. Qualitative approaches are inductive in nature and are characterized by a "belief that theory should be grounded in the day-to-day realities of the people being studied" (Palys, 1992, p. 410). This study examines these 'day-to-day realities' of white water kayakers.

A strong tradition of qualitative research is present in nursing and in some other disciplines but is seen less frequently in leisure research. Leisure scientists have expressed the belief that interpretive research will better reveal the process and meanings associated with leisure that are difficult to capture in traditional empirical design (Dawson, 1984; Howe, 1985; Kelly, 1991). Samdahl (1999) notes that interpretive researchers are sensitive to individualized meanings that often get hidden in broader generalizations. Whatever approach is used it is important to emphasize, as Kuhn (1970) does, that to understand scientific knowledge one has to understand the social processes by which and the social context in which that knowledge was produced. The data and the data gatherer are inseparable. The researcher's task is to present a clear and articulate account of the study from objectives to conclusions (Palys, 1992). It is my

intent to do that by first providing a detailed description of the ethnographic approach used, identifying the advantages and disadvantages of this approach.

The Ethnographic Approach

Knowledge was shown in the literature to be socially constructed, validated and communicated in the social interaction within the everyday culture of the learning environment (Driver et al., 1994). This study seeks to understand the culture of the learning environment of white water kayaking to learn how the white water kayakers construct the knowledge that enables them to handle the risks of the sport. To gain this understanding an ethnographic method of qualitative research was chosen. This form of research design has the following five characteristics:

- Behaviour is studied in everyday contexts, rather than under experimental conditions created by the researcher.
- The main sources of data are observation and informal interviews.
- Collection and interpretation of data does not involve following a pre-set plan or using pre-fixed categories.
- The focus of the study is a single setting or group.
- Data analysis takes the form of verbal descriptions and explanations to interpret the meanings and functions of human actions (Hammersley, 1990).

This type of research design is ideally suited to this study as the risk-handling behaviour of white water kayakers is learned and practiced in a wilderness river environment. Observing the kayakers in this setting was key to understanding their culture and its impact on the learning and practice of risk-handling behaviour. Participation in the natural setting allowed the generation of data on social interaction in specific contexts as it occurred, rather than relying on people's retrospective accounts, and on their ability to verbalize and reconstruct a version of the interactions (Mason, 1996).

The origins of ethnography lie in the writings of travellers concerned with informing their fellows about other societies (Spradley, 1980). The data in these early accounts was often misleading and the analysis was frequently speculative and evaluative. Hammersley (1990)

states that as the social science disciplines developed in the nineteenth and twentieth centuries there was recognition of the need to collect data in a systematic and rigorous manner.

The aim of social research is to capture the character of naturally occurring behaviour by first hand contact (Hammersley, 1990; Lofland & Lofland, 1995; Palys, 1992). Ethnographers argue that it is necessary to learn the culture of the group before you can produce valid explanations for the behaviour of its members. These issues are the reason for the centrality of participant observation and unstructured interviewing to ethnographic method (Hammersley, 1990). Another feature of qualitative research in general and current ethnographic approaches in particular is a conception of the research process as inductive (Hammersley, 1990; Lofland & Lofland, 1995; Palys, 1992). In this conception of the process, theoretical ideas are developed over the course of the research rather than leading or shaping the research. The following discussion of data collection techniques and data analysis describes the process by which the theoretical ideas were developed in this study.

Data Collection Techniques and Ethical Considerations

There were two main data collection techniques used in this study: participant observation and in-depth interviews. The participant observation approach allowed me to enter the social group of white water kayakers permitting the identification of potential subjects for the interviews. There are some methodological shortcomings to participant observation. Emotions, prejudices, attitudes and values may result in faulty inferences or the observer may simply fail to attend to aspects of the situation that are important to the group (Polit & Hungler, 1999). As the observations are not recorded until a later time, Polit and Hungler (1999) suggest there is a chance for memory distortions to occur. The fact that the observer is an involved participant in the situation may affect the actions and behaviours of the other group members (Mason, 1996). These issues are addressed in the following section.

Participant Observation

The site for my role as participant observer was a white water kayaking course held in the Pacific Northwest. It was a five-day course for those interested in learning the sport. The group involved in the course included the instructor and three other participants. "Immersion in the setting allows the researcher to hear, see and begin to experience reality as the participants do" (Marshall & Rossman, 1989, p. 79). Observing the characteristics, the causes and the consequences of the actions of white water kayakers and participating in the experience myself provided insight into the relationship between the learning process and the actions taken by the participants. Spradley (1980) asserts that it is the task of the ethnographer to discover questions that seek the relationship among phenomena that are conceptually meaningful to the people under investigation.

The first day of the course was spent in a small lake while the second day was spent in a large swimming pool. The remaining three days were spent on the river. These sites provided the opportunity to develop a beginning awareness of the risks involved in the sport, the behaviours and actions used to handle the risks, and the processes by which these risk-handling behaviours were learned.

The behaviours that are likely to be available for observation depend on the position of the observer. There is a range of involvement between complete observer and complete participant. Palys (1992) views these as separate types of relationships: complete observer, observational participant, participatory observer and complete participant. The difference in the middle two categories is one of emphasis. Leninger (1985) views the observer's role as evolving through a sequence of four phases from primarily observation to primarily participation with some observation, followed by a reflective observation phase. From my first encounter with the group my relationship was one of observational participation. Spradley (1980) refers to this as active participation. In active participation the ethnographer begins with observations but as knowledge of what others do grows, the ethnographer tries to learn the same behaviour. In this

way the ethnographer observes others and learns from them, and he/she also learns by observing him/herself (Spradley, 1980).

I informed the instructor and the other participants of my reasons for participating in the course. The fact that I was forthright about my motives reduced the chance of ethical concerns and enabled me to question the participants and instructor more directly. As noted earlier, the presence of the observer can influence the behaviour of the participants. Palys (1992) suggests that reactivity can be minimized if the observer closely resembles the participants. I therefore wore the same gear as the other participants and participated fully in all the same activities. I learned by doing rather than by just watching and listening. In this manner I was able to holistically experience the adventure first hand.

Before I joined the group I went over a list of questions that served to guide my observations. The list began with broad descriptive questions as suggested by Spradley (1980). What people are here, what are they doing, and what is the physical setting, are examples of the questions on the list. These questions guided my initial observations, enabling me to gain an overview of the situation. As I became more familiar with the group and with kayaking, I became more focussed in my questions and observations, seeking answers to more specific questions regarding risk handling behaviours and the learning process. In this way I was able to attend to aspects of the situation that were important to the group.

During breaks in the training sessions, I casually interviewed the instructor and the other participants. Casual interviewing is a key part of participant observation and often helps clarify the meanings of observed behaviours (Lofland & Lofland, 1995). During the sessions I made a mental note of specific comments, actions and environmental effects I had observed. Field notes from my observations and casual interviews were jotted down when I returned to the car and expanded upon as soon as I arrived home to minimize the time between the observation and the writing. The field notes included descriptions of events, conversations, and the physical

environment. I tried to be as objective as possible in my descriptions. My emotional responses and any analytical ideas or inferences were noted in brackets.

Participation in the kayaking course provided insight into the risk handling behaviours of white water kayakers as well as the process of learning. These insights plus the theories of experiential learning and risk decision-making discussed in the literature review directed the development of the questions used in the interview guide. Through the established relationship with the other participants in the course I received the names of other kayakers to approach for possible interviews.

Intensive Interviews

Intensive or unstructured interviewing is "a guided conversation whose goal is to elicit from the interviewee rich detailed materials that can be used in qualitative analysis" (Lofland & Lofland, 1995, p. 18). This method encourages respondents to define the important dimensions of a phenomenon and to elaborate on what is relevant to them, rather than being guided by the interviewer's notions of relevance (Polit & Hungler, 1999). This type of data collection is very labor intensive but when the researcher is interested, as I was, in in-depth responses from a relatively small group, this is seen to be the most effective form of data collection (Palys, 1992). It allows the interviewer the flexibility to respond to new insights with unanticipated avenues of questioning and makes it possible for participants to speak in their own words.

The interactive nature of the interview means that one must be careful about reactive bias. Palys (1992) suggests that the interviewees become very attentive to cues the interviewer emits, since they want to know whether they are "doing well" as participants. I was aware of this possible bias and endeavored to keep my responses neutral while still being encouraging. I let the participants know that except for my experience in the kayaking course, I was ignorant of the usual practices of white water kayakers. Lofland and Lofland (1995) state that the investigator

who assumes the role of one who is to be taught is in a good position to keep the flow of information coming smoothly.

Sample selection. Potential participants were identified initially by the people in the kayaking course and then by the participants themselves in a process known as network or snowball sampling (Polit & Hungler, 1999). To enhance the likelihood of achieving a range of participants, I chose both male and female subjects of different ages and varying levels of kayaking expertise. The literature reviewed showed that experience is more complex than usually portrayed and rather than being a static entity, involves a continuous interplay of the past, the present and the future (MacLeod, 1996). Because of this understanding I sought to interview kayakers who were in the process of becoming experienced and those who had experienced different learning situations to allow for the emergence of possible contrasting perspectives. Seven kayakers were interviewed to ensure inclusion of both sexes, varying ages and varying levels of expertise.

Name	Age	Sex	# of years Kayaking	Marital Status
Ted	18 yr.	Male	1 yr.	Single
Betty	25 yr.	Female	2 yr.	Single
Mary	27 yr.	Female	4 yr.	Single
Peter	33 yr.	Male	2 1/2yr.	Single
Jim	50 yr.	Male	15 yr.	Married
Jane	28 yr.	Female	2 yr.	Married
Alice	50 yr.	Female	2 yr.	Married

Figure 3. The participants (names are pseudonyms).

Each participant was contacted by phone and informed of the nature and purpose of the research. I then requested the kayakers' participation in an interview which would require approximately one hour of their time. Appointments were made at a time and location that was

convenient for the participants. Out of the seven kayakers, four chose to be interviewed in their own homes and three chose to be interviewed in my home.

Ethical considerations. The interview sessions began with an explanation of the nature of the study and its importance in increasing the understanding of risk handling behaviour. I explained that it was particularly important to gain insight into the process by which these behaviours were learned. Permission to tape the interviews was requested. Taping the interviews allowed me to concentrate more fully on the responses of the participants. A discussion of informed consent ensued. Participants were given assurances that they would remain anonymous and their responses would be kept in confidence. They were told that their names would not be used in the interview recording, the transcription or any future publications that may result from this research. On reflection I realized that in a small community there was the chance the participants would be able to recognize other participants when asked to review the analysis. These measures did, however, seem to be effective. The participants said that even though they tried to figure them out, they were uncertain of the identity of the other participants. The kayakers were advised that they were free to interrupt, ask for clarification or even withdraw from the interview at anytime. Consent forms (Appendix A) were signed in duplicate, one for the participant and one for myself. The consent forms included phone numbers to call if the participants had any ethical concerns or any questions regarding the study. I identified the participants by pseudonyms in the transcripts and have stored the data in a locked file cabinet in my home. This data will be disposed of five years following completion of my thesis.

The interview guide. A checklist was prepared to guide the interviews much the same as questions guided my observations as an active participant. The literature review and my own experience as a participant observer gave direction to the subject matter that was included in the interview guide. Spradley (1980) describes three categories of questions that are used in ethnographic research. These descriptions provided further direction for the development of the guide. Broad descriptive questions were used to begin the interviews and to introduce the

different topics of interest. These questions allowed the participants to speak freely in their own terms, describing their experiences, their companions, their actions and the physical environment. Structural questions as described by Spradley (1980) were used to elicit a more focussed response. These questions were probes to determine the different kinds of kayaking companions, risk-handling behaviours, and physical environments. Spradley (1980) describes the third category of questions as contrast questions. These questions were used to help clarify the cultural meanings by pointing out the differences. For example the kayakers were asked to describe their best kayaking experience as well as their worst experience. The kayakers referred to desired kayaking companions as the right people. They were then asked to describe the wrong kayaking companions. The interview guide is included as Appendix B.

The interviews. A practice interview was held to test the capacity of the interview guide to elicit a good response from the participants. This interview went well, generating rich data on the participants' kayaking experience, her risk handling behaviour and her process of learning these behaviours. This interview was therefore included as one of the seven.

Once an explanation of the study was given and the ethical issues addressed I began the interview by asking the participants to describe their best kayaking experience. This question proved to be a good icebreaker, putting us both at ease and creating a relaxed atmosphere for the interview. The relaxed atmosphere allowed the participants to be open with their feelings and opinions. Except for the first question there was no strict ordering of the other questions. The guide served more as a checklist to ensure I had covered all the topics. It was also a useful for note-taking during the interview.

The open-ended questions allowed the kayakers to tell their own story of their kayaking experiences as well as their learning experiences. "Narratives of skill learning provide a description of the multiple realities constructed by different students as a result of their experiences" (Langley, 1995a, p. 126). This type of interviewing, as suggested by Lofland and

Lofland (1995), allowed for in-depth probing and explanations of participants' responses, providing rich, detailed information to use in the qualitative analysis.

Immediately following the interview I jotted down my impressions of the interview. This included the emotional tone of the interview, any particular difficulties I encountered and my own insights and reflections about the experience. These observations were included as field notes. I began transcribing the tapes the day following the interview and considered this careful review of the data as one step in the process of analysis.

Data Analysis

Analysis of the data was ongoing throughout the study. Analysis is conceived as "an emergent product of a process of gradual induction" (Lofland & Lofland, 1995, p. 181). It is the ordering of the data. In qualitative studies data collection and analysis goes hand in hand (Marshall & Rossman, 1989). I was always mindful of the purpose of the study: increasing the understanding of risk-handling behaviour and the process by which the behaviours were learned. The purpose guided my observations as a participant in the kayaking course and directed the questions, which guided the interviews. The insights gained in the initial observations and interviews benefited future observations and interviews by adjusting my assumptions, allowing me to ask more focussed questions of the situation or the interview participants.

Once the data were collected it was questioned in much the same way as I questioned my observations and the interview participants. Analysis of the collected data is the first step in going beyond mere descriptions of behaviour and things to discover cultural meaning (Spradley, 1980). Transcribing the interview tapes was a slow process of going over the data again and again. This process forced me to become familiar with the data in intimate ways. Polit and Hungler (1999) state that there are no systematic rules for analyzing and presenting qualitative data; rather there are styles of analysis. I chose an 'editing analysis style' using a method described by Spradley (1980). Spradley (1980) describes ethnographic analysis as "a search for the parts of a culture,

the relationship among the parts, and their relationship to the whole" (p. 116). I began the search for the parts of the culture of white water kayakers by identifying basic units or cultural domains such as kinds of kayakers or kinds of kayaker's behaviours. Domains as described by Spradley (1980) are cultural categories that are made up of three basic elements: cover terms, included terms, and semantic relationships (see figure 4).

Cover Term	Included Terms	Semantic relationship
Kayakers	Right people Wrong people	'Is a kind of' Companion (principle of inclusion – places them inside the cultural domain)
Kayakers' Behaviours	Wearing equipment Paddling skills Exiting the kayak Reading the river Rolling the kayak	'is a way to' handle the risk

Figure 4. Domains

Identification of the domains led to more focussed questioning of the data. I identified smaller categories included in the domains and looked for the ways in which the cultural domains were organized. I was searching for patterns that pointed to the ways in which the cultural behaviour and cultural knowledge was organized in a domain. I used what Spradley (1980) referred to as taxonomic analysis to see how several cultural domains were organized. At this point I was looking for patterns based on similarity. "Identifying salient themes, recurring ideas or language and patterns of belief that link people and settings together is the most intellectually challenging phase of data analysis and one that can integrate the entire endeavor" (Marshall & Rossman, 1989, p.116). Marshall and Rossman (1989) and Lofland and Lofland (1995) refer to

this stage of organizing the data as coding. My process of identifying the different domains was very similar and "served to summarize, synthesize and sort many observations made of the data" (Lofland & Lofland, 1995). I used a split screen on the computer to copy and paste the various things (places, people, actions, etc.) identified in the transcripts of the field notes and interviews into domains identifying the included terms and the semantic relationship.

Spradley (1980) asserts that cultural meaning comes not only from patterns based on similarity but also from patterns based on contrast. The next step then was searching for the attributes (components of meaning) of the terms in each domain and asking, not how they are similar but how are they different. Spradley (1980) refers to this stage of analysis as componential analysis.

The final stage of analysis described by Spradley (1980) is theme analysis. In this stage I searched for relationships among the domains and for how they are linked to the cultural scene as a whole. Cultural themes as described by Spradley (1980) are principles recurrent in a number of domains, tacit or explicit and serve as relationships that connect different subsystems of a culture. Spradley (1980) asserts that searching for themes means discovering the relationships among domains and the relationships of all various parts to the whole cultural scene. To aid in identifying the various themes I used a process called diagramming to provide a visual presentation of the emerging relationships among the identifled domains. The diagram that I developed to help me begin the writing is appended as Appendix C. Writing up qualitative research is an intensive process of writing, reflecting and rewriting, as meaning developed. The identified themes suggested a place to start in communicating the cultural meanings I had discovered. In a way this was another level of analysis as domains were often regrouped as new insights were gained during the refiecting and writing process.

Each participant was sent a copy of the draft data analysis, chapters 4, 5, and 6. I asked the participants to review the analysis and to point out any misinterpretations of their stories. I also asked them to add any comments that would give further insight into their risk handling

behaviours or their process of learning. There were no negative comments or requests to delete any of my interpretations of the data. Several of the participants commented that they recognized procedures and processes and found it interesting to think about the different aspects of risk-taking and decision-making they experienced.

Data Quality/Rigor

Ethnography and qualitative research in general have been criticized for not being scientific when compared with quantitative approaches (Hammersley, 1990). Some of the specific criticisms reported suggest that qualitative research suffers from a lack of precision as a result of the absence of quantification. The reported criticisms also suggest that observation and interviewing are subjective sources of data as they are not guided by structure that would maximize the chances that another observer or interviewer would produce the same results. Further reported criticisms suggest that small sample sizes produce findings that are not generalizable and ethnographers are unable to identify causal relationships because the variables cannot be controlled.

To address these criticisms and establish the truthfulness of the findings in this qualitative study, I used the four constructs proposed by Lincoln and Guba (1985). The first is credibility, in which the goal is to demonstrate that the inquiry was conducted in such a manner as to ensure that the subject was accurately identified and described. Hammersley (1990) states that it is impossible to reproduce a phenomenon by describing it, as the researchers' descriptions are always selective. I therefore provide justification for my selections. The aim of this study was to increase the understanding of risk-handling behaviours and the processes by which these behaviours are learned. I drew on theories of risk decision-making and experiential learning as I participated in the kayaking course and undertook the interviews, producing descriptions that focused on situations and behaviours that reflected risk decision-making and learning. Participating in a situation in which many of the risk-handling behaviours were learned and

interviewing kayakers of different ages and genders and at different stages of skill development allowed me to approach the subject of risk-handling behaviour from many angles. The rich data obtained from using this approach allowed me to describe risk-handling behaviours and processes of learning in such a way that the participants were able to readily identify with the descriptions. Other kayakers reading this study will be also be able to recognize these behaviours and situations as familiar.

The second construct deals with transferability, the ability of the researcher to generalize the findings of one study to the population from which the sample was drawn or to other populations presumed to be similar. It is not the intent of qualitative studies to prove broad universal generalizations. The intent of ethnography is to develop detailed descriptions of culture and cultural life (Hammersley, 1990; Spradley, 1980). The rich, detailed descriptions of the participants will allow others to evaluate the applicability of the findings to different contexts.

Dependability is the third construct used to establish the trustworthiness of a study. The qualitative/interpretive assumption that the social world is always changing makes the problem of replication of the study difficult, if not impossible (Marshall & Rossman, 1989). In my choice of qualitative research, the intent was to study risk-handling behaviour in the natural environment and gain insight into the complexity of situational contexts and interactions as they occurred. The systematic collection and analysis of data and the thorough notes, recording each research decision and its rationale provide an audit trail that others wishing to inspect my study can follow.

The fourth construct is confirmability. In my role as a participant observer I experienced many of the emotions described by the interview participants. To enable me to be rigorous in my analysis of the data, obtained through the observations and interviews, I recorded my emotions, insights and assumptions. This allowed me to examine them and question their influence on my interpretation of the data. I discussed my interpretations with my thesis advisor who critically questioned my analysis. I also discussed my findings with other people who engage in high-risk activities.

The strength of the approach taken in this study lies in its ability to generate the rich, detailed material, which provided information on the risk-handling behaviour and the processes by which that behaviour was learned. This information addresses a gap in the literature, regarding risk handling in a natural setting and contributes to the existing research on risk-taking behaviour. The information is relevant to those involved in health promotion and disease/injury prevention and to those involved in adventure recreation. The following chapters reveal this information.

CHAPTER 4

The Kayaking Experience

To understand how white water kayakers learn to handle risk it is first necessary to understand what it is they need to learn. This chapter begins with a general account of the sport, providing information on the equipment, the river environment and the skills which are required to paddle a kayak in white water. The kayakers routinely engage in what to an outsider appears to be high-risk activities. Exposure to these risk activities engenders intense feelings that affect the kayakers' behaviour. In describing their feelings, the kayakers reveal what it is they value in the sport. The chapter explores the kayakers' tolerance for risk and describes how their level of experience, their feelings and their stage of life affect their risk tolerance. The risk-handling behaviour is described showing how the participants assess the situation, devise a plan to handle the risks and then implement the plan. Differences are identified between the practices of the experienced and the less experienced kayakers. These differences provide greater insight into what it is the participants need to learn.

White Water Kayaking - the Sport

The rich data from the interviews and field notes provide a vivid description of the white water kayaking experience. The boat, a kayak, is a decked structure between 7.5 and 12 feet long, with a small oval cockpit opening that is covered with a spray deck made of neoprene or nylon to keep the water out. The kayakers say that initially the spray deck causes them some anxiety, a feeling of potentially being trapped in their kayak upside down in the river.

Kayakers sit almost on the bottom of their boats with their knees braced against the sides. Ideally, the kayak is fitted to the paddler so that the boat moves together with the person's lower body. The kayakers think of wearing their boats rather than just sitting in them.

Maneuvering the boat is done using a double-bladed paddle. Most paddles are asymmetrical with the blades curved and offset from one another on the shaft. The curve of the blade helps it to grip the water. The offset reduces wind resistance from the non-active blade and puts the kayakers' wrists in a neutral position when paddling. The kayakers are able to navigate the river by shifting their weight in the kayak and using various paddle strokes and techniques. Ted describes how this is done. "You have to lean forward more in your boat so you won't get flipped back in a hole or a reciprocator. I just concentrated on keeping forward and keeping really strong paddle strokes" (Ted, p. 4).

The basic white water moves are the eddy turn, pull out, and ferry. The eddy turn allows the kayakers to enter an eddy (an area of calm water downstream of a rock or other obstacle) in order to rest or survey the rapids below. White water kayakers generally put into rivers in eddies with their boats pointing upstream, allowing them to enter the current with maximum control. They use the pull out to reenter the current and proceed downstream. To cross from one side of the river to the other side, the kayakers angle their boats to the current. This allows them to ferry across, letting the river do most of the work.

Proper boat lean allows the kayaker to vary the effect the river has on the boat by changing the hull shape to the current. This keeps them from flipping when entering or leaving the current and helps them to steer the boat. Bracing strokes, slapping the paddle on the water, can help save kayakers from flipping when their lean fails. When they do flip, they use a technique called rolling to right themselves. There are many different types of rolls including the Eskimo rescue, which allows one boater to help another by extending the bow of their boat to assist the capsized paddler to roll up. When the kayakers are confident of their roll, they can enjoy the thrill of remaining in the midst of difficult rapids, riding the waves, knowing it is likely they can recover quickly and easily if flipped. Alice describes just such an experience. "I had

gotten my roll down well. There was a big wave and I felt quite confident for the first time to go and play in it. It was really kind of exhilarating" (Alice, p. 1).

When beginner kayakers flip over they use 'the wet exit' to get out of their kayak. This involves tucking forward, 'kissing the deck' as they flip over, to protect the face and torso from rocks that may be encountered underwater. Protecting the face from rocks is not always possible, as shown by the following descriptions. "She smashed her face into a rock and she knocked her teeth fairly badly" (Jim, p. 20). "He was guarding his head like this and banged up his elbows and his face a little bit. Another guy broke his nose once" (Ted, p. 12).

To release themselves from their kayaks for a wet exit, the kayakers must let go of their paddle with one hand, pull the grab loop on their spray skirt, put both hands on the boat and push out. Exiting their kayak, however, does not always extricate them from the risk situation. The kayakers still have to handle the river current. Wet exiting in Class IV or Class V water is extremely dangerous, as in the turbulent water the kayakers are not able to control their actions. The frigid water chills the kayakers even when they are wearing appropriate cold water paddling gear. Once they have exited their kayak, they require rescuing by fellow kayakers. This is one of the main reasons that kayakers paddle in groups. It requires time to drain the water out of the kayak and get going again; the wet exit is definitely not the preferred method of recovering from a flip.

White water rapids are relentlessly powerful and totally ruthless. Paddling in these rapids provides the thrill and also the risk of the sport. The rivers are rated according to difficulty and danger from Class I - Class VI, with class I being the easiest and Class VI water being rarely run, as it presents a serious threat to life. Kayakers sometimes refer to the higher-class water as 'bigger water' or when the creek is difficult but low volume, as 'technical' water. The kayakers in the study group run rivers up to Class V. The majority of the rivers they run are

in the Pacific Northwest and their level of difficulty changes according to the time of year and water level.

> The Kitimat River was just flooded, like it was just big time. And we went to the Williams just yesterday and the river changed incredibly. I couldn't believe 'cause this one big head wall was just washed right away and one of the waterfalls wasn't even barely there. (Ted, p. 17)

The white-topped waves are evidence of the power of the river. These waves are formed when moving water is compressed into a narrow channel or gradient, or when the river bottom changes abruptly or when fast moving water meets slow moving water. The kayakers describe surfing on a wave, with the river rushing by, as one of the ultimate thrills in white water.

One of the dangers comes from entering a hole or hydraulic. These holes, like the waves, are 'play spots' for the more experienced kayakers. The hole forms when water falling over a ledge or other submerged obstacle, moves back and upstream below the drop, forming a white frothy recirculation current. The following descriptions show the force of the water and give some indication of the risk involved when caught in these holes.

Mary: These are just like little whirlpools, you know, like when the water goes down the drain. The water actually does that in the canyon. And so you'll be in one spot and then you'll go in one direction, the water will swirl you around and kinda turn your boat. And you have to be like super strong to paddle against the force of the water, 'cause its pretty high water and then it's got no where to go except in the canyon, so it just does crazy things. And I got flipped over, over a wave or something and couldn't roll and the water felt like it was almost sucking you out of your boat. (p.7)

Peter: You get spinning around and then you feel yourself being released from it and you feel like you are coming up to the surface and then it would grab you and pull you and you can't get air or anything (p. 6).

It does not take many encounters with the river environment before the kayakers are aware of the power. One of the kayakers describes her relationship with the river:

> In rivers, the water does whatever it wants. Sometimes you have a certain amount of control, but the river does what it wants. The water is way more powerful than you are and you can plan with it; then everything is fine but if you screw up and you don't do what you're supposed to, then it will get you (Mary, p. 22).

Mary is aware of the power of the river and she respects this power. Being able to control her actions against this power provides the kayaking challenge.

Overhanging fallen trees or branches are other hazards identified by the kayakers. They call these hazards strainers, as the tree branches allow water to flow through them but can trap a boater. Undercut rocks are also identified as hazards. This is due to the fact there is generally little if any pillow of water to keep the kayakers away and the force of the river can trap them against the rock. This is even more dangerous, should they flip out of their boats and become swimmers.

The remoteness of the areas kayakers choose to paddle adds to the risk of the sport. If they are in a canyon section someone may have to rappel down to get them out. Jim says that the risks on wilderness trips vary "from grizzly bears to hypothermia to an appendectomy at the riverside". In fact, he comments "It's surprising how few accidents there are, given the nature of the environment that it takes place in" (Jim, p. 9).

These descriptions show the reality of the risks involved in white water kayaking. It is the challenge these risks present that engenders the feelings experienced by the kayakers. These feelings, as will be shown in the next section, lure the kayakers back to the sport and motivate them to acquire the skills necessary to survive the risks.

Feelings Associated with the Kayaking Experience

The great attraction of the sport appears to be related to the intense feelings experienced by the kayakers. There are differences in the feelings reported by the kayakers. The meaning behind these differences is explored, as the feelings appear to affect the kayakers' tolerance for risk and their risk handling behaviour. Importantly, the fear expressed by the less experienced kayakers seems to motivate them to develop the skills necessary to maintain some measure of control in this high-risk sport.

Fear

The predominant feeling expressed by the less experienced kayakers is intense fear or terror. Some of them express this feeling of terror when describing situations in which they perceive themselves to be out of control; when they are caught in a hole or flip over in a rapid and are unable to roll up.

Mary: It was terrifying. I got stuck in an eddy that was going round and round and I was hanging onto my boat by one finger and I wasn't able to breathe. (p. 8)

Jane: I was just so terrified. I wiped in just this small little rapid and I couldn't get up. (p. 7)

Other kayakers describe the feeling they experience when caught in similar situations as weird rather than terrifying.

Alice: It was a weird feeling, that I wouldn't want to be stuck. (p. 11)

Peter: It is a real weird thing being in a boat and not being able to get out. (p. 23)

Betty: It was kind of a weird feeling when you are upside down in all that roaring water. (p. 5)

The dictionary describes "weird" as something that is incomprehensible or frighteningly strange. Describing the feeling they experience as weird suggests that the kayakers cannot relate the feeling to any previous experience. Ted confirms this perception when he describes his first time being caught in a hole. He says: "It's a big black hole underneath there and you're trying to get underneath and you can't. It's a whole new feeling" (p. 22). Peter admits he did not know what the water was going to do with him. He says: "When you are doing that [spinning around in the water and being pulled down] you don't know if it's eventually going to give you up or whether it's just going to keep doing this or not" (p. 6).

These descriptions show that at times the less experienced kayakers find themselves in situations where they are unable to control their actions. The river is in charge, spinning them around and thrashing them about. They cannot relate this feeling to any previous experience and

so are unable to judge the outcome. They cannot identify strategies for regaining control of the situation. The following example shows how this fear can escalate into a feeling of total panic.

> I started panicking. George came over to do an Eskimo rescue and I grabbed up onto his boat but I couldn't roll up. I lost my paddle for some reason and I couldn't get all the way up. So we were going down the river and I was hanging onto his boat and I was just sideways and trying to keep my head above water. And we were coming up to a really big logjam. So George explained that I was going to drag both of us into it and we would both be in trouble so he would have to push me off or I had to roll up right away and I couldn't. (Jane, p. 7)

This panic state may increase the danger of the situation, as the kayaker is unable to respond to advice and react appropriately to the situation. Jane's state of panic prevents her from rolling up and causes her to put both herself and another kayaker at risk.

These descriptions show the intensity of the feelings experienced by kayakers when they are unable to control their actions in the situation. They are aware of the danger of uncontrolled fear and acknowledge it to be a risk factor in itself. Ted admits that: "fear is a guy's biggest enemy out there" (p. 33).

Controlling their fear becomes possible as the kayakers become more experienced. In the following example, Betty does not exhibit terror or panic. "The water was pulling me underneath and was holding me underneath and that scared me a little bit" (p. 6). Betty describes the situation further providing insight into how she is able to control her fear.

> I knew that if I hung in there that I would either do a roll at the bottom or else Bill would be there for an Eskimo Rescue. So it wasn't a bad experience. I also knew that the water level was high enough that I wasn't going to hit anything under water. It was all water. I was hoping I would be able to hold my breath long enough but I knew that if I didn't and I wasn't able to, the option was always there to swim. So I never felt that my life was in danger. (p. 13)

It seems being "scared a little bit" enables Betty to become more focussed, assess the situation and determine options for regaining control. Betty shows confidence in her assessment of the river; she is not worried about hitting her head on the rocks. She is confident in her ability to roll up or do a wet exit if necessary. When the kayakers are able to identify ways of regaining control of the situation they are then able to control their fear.

As the kayakers become experienced, they describe a feeling of nervous tension rather than fear when they challenge the white water environment. "You pump yourself up before you go on the river and you get all that nervous tension" (Peter, p. 17). Peter says this nervous tension makes him have respect for the rivers he is running. The nervous tension seems to help them to focus more intently on the challenge of the sport. Peter's comment indicates that even the more experienced kayakers challenge the river with some trepidation. Fear is not the only feeling experienced by the kayakers. They also experience a wonderful feeling of exhilaration.

Exhilaration

Exhilaration seems to be the opposite of fear. The following examples show that when the kayakers face their fears and survive the risk situation they experience this feeling of exhilaration.

Ted: I've been pretty scared sometimes and I'm thinking: "I don't know if I can." But I get down and I think: "Oh Yeah!" (p. 27)

Mary: It was beyond what you thought you were capable for and then you kind of push the limit a bit and you did it and you survived. That's when you get the gleam in your eye, right. (p. 21)

Peter: I actually came up with a smile on my face, 'cause it was such an experience to be doing it. (p. 8)

The kayakers value this feeling of success to the point where they say there is no reason to participate if they do not get the feeling. They are willing to challenge their fears to achieve this feeling of success. As Ted states: "I just basically threw away my fears and tried it again" (p. 1). Ted's statement makes throwing away his fears sound effortless. The following descriptions give an indication of the reality of the challenge.

Ted: I'm swimming over drops, going off water falls and trying to get to shore and I'm just getting blown off the rocks. And I'm thinking; "Holy Cow! How am I going to do this?" I kept choking on the water and after I got to shore I was just going: "I don't want to get back into that boat." But I had to do it again, no matter what. I didn't want to leave like that. (p. 13)

> Mary: There comes a point when sometimes you are standing on the edge of the river saying, "I'm never going to do this again. This is so terrifying I never want to have to do this again." But there are so many parts of it that are so wonderful. (p. 13)

The adrenaline rush that even the experienced kayakers achieve when they have a successful adventure appears to be the lure of the sport.

> Peter: There is definitely an adrenaline rush that does make the sport quite attractive. In sections that I've run twenty times and I'm quite comfortable in going out there but there are certain parts of the river that always get your heart pumping and the adrenaline. And when you're off the river, I guess because of the adrenaline flow in your body, there's quite a natural kind of high and you feel really good. (p.17)

The experience of success seems to stem from a feeling of being able to control the situation, their actions or their feelings. If the river flips them over they want to be able to roll back up again. If they are caught in a hole and spinning around they want to be able to control their fear, get out of the current and get to shore. Jim clarifies the issue of control. "Not to control anyone else, just to be in control of what I am doing" (p. 32). This suggests that they value not only the feeling of success but they also value the acquisition of skills, which enable them to handle the inherent risks of the sport.

The thrill of surviving a risk experience is not the only lure to the sport. The beauty of the wilderness environment draws all of them.

> Some of the excitement always from day one was the environment. Just the beauty of where I was and where these boats would let you go. You get to see places nobody else does. The exercise, the fresh air, where it all takes place is very appealing. (Jim, p. 19)

Jim says this beauty rejuvenates him, both spiritually and physically. He maintains "It puts a spring in my step" (p. 25). He also acknowledges that over his 20 years of kayaking his focus has changed from the "rock'um sock'um white water" to the quieter enjoyment of wilderness trips on a remote river. In order to enjoy any type of white water experience the kayakers say they need to have confidence in their ability to have a successful experience.

Confidence

The thrill of success increases the kayakers' confidence in their ability to control their feelings and their actions in the white water environment. The sport becomes enjoyable when they develop this confidence. For the beginner, this occurs when they are able to control just getting down the river, when they are able to eddy out of the current. "I was building up confidence and I was maybe enjoying it a little bit, now that I think about it. 'Cause I would go in the water and then eddy out and it felt okay and everything was good" (Jane, p. 9).

Each successful experience increases their level of confidence inspiring the kayakers to challenge the play areas, the white water. Alice says, "It was the first time I had gotten my roll down well. There was quite a big wave and I felt quite confident for the first time to actually go and play in it" (p.1).

Ted's description of a successful run through some Class IV plus water demonstrates how his confidence increases during the run. "I just started paddling and then everything started going good and my confidence just went up from there. I had a really good run and I felt really confident after leaving that river" (p.1).

A successful experience gives the less accomplished kayaker the confidence to accept the challenge presented by the white water environment. When kayakers are confident in their abilities they anticipate a successful adventure. When they fail to meet these expectations they express great disappointment in themselves. This indicates the challenges are self-imposed. They are pushing their limits. Betty describes those times when she is disappointed in her abilities as her worst kayaking experiences.

Betty: [When I am disappointed] in my ability to do what either the person leading us down the river wants us to do; like eddying out in a certain situation, or flipping over and not being able to flip back up and having to swim. Or when you realize if you tried one more time, you would have been able to flip back up. Usually I'm always fairly excited when I get to the end of the run but there is always some disappointment if you feel frustrated by how the run went or by your lack of ability to do things. (p. 12)

The following example of a situation where Ted fails to do as well as he anticipates echoes this disappointment in self. "Basically I just kind of let myself down in a sense because I did do bad in a sense. I swam twice and I scared myself. —— That was the worst feeling ever" (p. 8).

There are two reasons Ted feels disappointed with himself. He is unable to control his fear and he is unable to control his actions in the white water. This disappointment in his abilities is shown to affect his self-confidence. "I just didn't like how I was paddling that day and it really gave me a bad feeling, you know. And the next day on the river I'd probably feel less confidence" (Ted, p. 9).

These examples indicate that when kayakers experience a bad trip down the river it weakens their faith in their ability to have a successful experience. Ted feels this lack of confidence puts a kayaker at increased risk. "You can really get yourself into trouble if you don't feel comfortable. You have to feel confident that you can do it" (p. 27).

It is important for the kayakers to have confidence in their ability to control their actions. This means they need to feel confident that the consequences of an unsuccessful run are manageable and acceptable. In order to maintain their self-confidence, the kayakers must experience successful adventures on the river. This drive for success seems to come as much from the fear of failure as from the thrill of success.

The intense feelings expressed by the kayakers are closely related to the extent to which their skill level matches the challenge of the situation. Their feelings range from extreme fear to feelings of exhilaration, from crushing disappointment in their kayaking abilities to supreme confidence. The kayakers are attentive to these feelings when they choose the kayaking experience.

Choosing a Successful Experience

The choice of kayaking experience, to paddle the river or to walk out, depends on two factors: the kayakers' perception of the risk situation and their perception of their ability to handle the risk situation. In the ideal experience, the kayakers' skill level matches the challenge of the situation. The kayakers' perception of the risk involved in a certain situation and their perception of skill level depends on a subjective assessment. The fact that this subjective assessment may not always be accurate can have serious consequences for the kayakers.

Perception of Risk

It was a surprise to discover the kayakers, in most situations, do not perceive themselves to be at risk. The lack of perceived risk may be attributed to the fact the kayakers are confident in their abilities to control their actions in the risk situation. They anticipate a successful experience. The following examples describe this feeling of confidence as the kayakers choose their experience.

Alice: I am aware of the risks and they do not seem like risks to me at my knowledge level. (p. 5)

Ted: I know what I am getting into. Like I personally know I have good judgement. Like I've done stuff where somebody's going to say; "You're stupid, don't even think about it." But I know I can do it, right? (p. 25)

The kayakers' assessments of their own skill level and the risk situation is a subjective assessment that requires knowledge of the environment in different conditions and an awareness of one's abilities in different risk situations. Because of their lack of experiential knowledge and their lack of awareness of their abilities in different risk situations, a less experienced kayaker's assessment may not always be accurate. The following examples show the risk situations that developed because of inaccurate risk assessments.

Peter: We had done it the year before. It was like my first year paddling. We actually ran these falls, which are about eight feet or so, just a simple drop into a pool. It was lots of fun,

> so we thought: "Let's do it again." This time I went over the falls and got pinned underneath the falls. The water was a lot more powerful, a lot more volume in it, so I ended up underneath and I came out of my boat, 'cause I realized I was not going to be able to roll. And then I ended up getting, I guess you could call it turbining. You get sucked down. (p. 6)

Mary: There is this one drop, CN drop and a lot of them would go up to the drop and they paddle really slow and they kinda look at it like, Oh No! Here it comes. And they kinda back paddle a little bit and you go over sideways. But nothing ever happened to them. They would go over and maybe they would swim. But swimming was like no big deal, so they never had to swim in big water. They didn't understand that swimming is not always your best friend. Knowing you can come out of a boat is not always knowing that you're doing something good for you. (p. 21)

Mary's comments suggest that the kayakers have to actually experience an adverse situation to develop an accurate perception of the risk involved. The kayakers' perception of the risk situation is only one factor which influences their choice of kayaking experience. The other factor is their tolerance for risk.

Risk Tolerance

Some of the kayakers admit to liking the risk while others say they are cautious and do not like taking risks over which they have no control or where they feel their lives will be in danger. In the following example, Peter describes his tolerance for risk.

Peter: Where I think my limit is, is one where the risk becomes totally based on luck and not so much on skills. Where those rivers even the best paddler, if he just has a bad day or ends up, you know the luck of the draw, being pulled some way that they never thought they would be. And it has nothing to do with skill and it has serious consequences. That is where I see my limit is. (p. 16)

Peter assesses the situation and determines whether or not he can control the situation. He says that he is not willing to choose an experience where he could lose control and come to serious harm. The paradox is that identifying the situations where he could lose control and come to serious harm requires experience.

Ted admits when he first started kayaking he "just hoped for the best." He gets into situations that are more dangerous than he anticipates. These experiences have an effect on his tolerance for risk.

> Ted: So I've kinda been thinking more like why shock myself. Before I was just like: " Yeah let's do it!" "Yeah right on!" "'Cause that's what we were doing when we first started, hey. And then I started seeing some pretty insane stuff and thinking: "Holy Cow! We gotta settle down here and better start thinking a little more, you know." Cause actually getting more experience has helped me get more focussed to see the risks that are worth taking. (p. 36)

The kayaking experiences have had a profound effect on Ted. He is now aware of his own mortality. He no longer believes himself to be invincible. Now he carefully weighs the benefits of the experience against the potential costs.

> Ted: It's called Kelly Drop, where two German guys died there. And I'm thinking: "Holy Shit! I don't want to do that." I knew it looked crazy. Big Holes! My friends went down it like cakewalk and I knew I could have done it. But there it was. It just didn't meet my eyes up, you know. I just didn't think, you know. What am I going to get out of it, a few seconds of thrill or my life? So I just think I'm not going to do it. (p. 26)

Ted is developing a "practiced eye". He consciously examines the situation. He weighs the benefits of a few seconds of thrill against the cost of his life. In the following example Ted again examines the situation. This time he examines the costs and benefits of the safe behaviour as well as the risk behaviour.

> It was a Class V and it was flood water right and it was just crazzzzy, like you wouldn't believe it, hey. First drop my buddy got flipped end over end in a big hole and he's got a long boat. End over end is big, hey. And we got there and we said, "well what are we going to do?" You've not even hit the canyon yet, right? And we thought, "Oh Shit!" And it was a big hike out. And we said, " Well let's not do it." And we all said, "Okay let's go out." And we packed our boats out for a couple of hours, trying to get over this big mountain there. But you know, we knew we couldn't do it. (Ted, p. 25)

The cost of the safe behaviour is an arduous hike out carrying their kayaks. The benefit is they will survive to kayak again. With experience the kayakers become more discerning when choosing their kayaking experience. At this experience level their decision is still made by consciously identifying the risk and assessing their ability to handle the risk.

Jim, with 15 years of kayaking experience, does not always use this conscious rational process to arrive at a risk decision. There is no obvious matching of skills to level of risk. His feelings or intuition guide his risk decision. Jim describes his process of risk decision-making.

> Jim: Every once in a while when I go to the put in, every once in a while there's this little butterfly in my stomach that is still there, because I know there are two canyons in there. I've paddled them many times. I've never had any injury in there. So I have no reason to be afraid of them, but there's something in my stomach that just kind of flutters. And maybe it's just to remind me that yes, at this put in it looks very nice and a lot of it's very safe and flat, but down river just be aware and I think it helps me to remind myself as I'm paddling down to loosen up. (p. 12)

The "little butterflies" in his stomach keep Jim attuned to the river environment. He observes this environment with an experienced eye, alert to any subtle warnings of danger. In another example of his process of decision making he describes the feeling as being "Zen like."

> Jim: I've been on rivers where I've paddled it dozens of times and I've done a certain drop many, many times and every once in a while, you just get there and you look at it and you say: "I don't want to do that. I just don't feel like it, something doesn't feel right." Maybe the water is too high, too low; maybe you didn't get a good sleep. There isn't just one thing. You look at it and its almost Zen like. For me anyway, it just doesn't feel right. "Do I feel like paddling this?" And if I do feel like paddling, it's usually because I've been paddling strong. I feel good. I don't have any nagging injuries that have been bothering me. "I can do that" And so you just do it, hopefully. (p. 10)

Jim tries to rationalize this unconscious decision-making but is unable to pin point exactly what it is that influences his risk decision. Dreyfus & Dreyfus (1986) refer to this ability to intuitively respond to patterns without decomposing them into component features as "holistic discrimination and association" (p. 28). This type of understanding "effortlessly occurs due to discriminations resulting from previous experience" (Dreyfus & Dreyfus, 1986, p. 28). This again points to the value of experience in this high-risk sport.

The kayakers' stage of life and gender affect their tolerance for risk. The young single men admit to liking the risk and display a greater tolerance for risk than the young single women. The women admit to being cautious, choosing their risk situations carefully. The kayakers' stage of life influences their tolerance for risk as well.

> Most of the highest risk activities we have ever done were before we had a child. And definitely even George has talked about it a lot. Once you have children it totally changes. You are still out there and still doing your stuff, but your level of risk, at least for us is waaaay lower. George can't believe it. He says he's been in situations that before he would have done no problem and gone for it. But now he won't do it. He just thinks about what if anything was to happen. (Jane, p. 21)

Jim attributes his decrease in tolerance for risk to his age.

> For the last year or two I've surprised myself a couple of times. I've left my boat and walked a drop. I did not go blindly down a river and rely on instinct and reflexes. But that's just age. (p. 15)

The examples of the kayakers' tolerance for risk indicate their tolerance changes as they develop an awareness of their own mortality. The costs of an accident increase when the kayakers have dependants to consider. They are aware that when they are older injuries take longer to heal. The potential costs of the experience increase while the potential benefits remain static. The results of the kayakers' cost/benefit analysis decrease their tolerance for risk.

The descriptions show that for the most part the kayakers are not reckless in their decision-making. They consciously endeavor to match their skills to the situation. This means that as they gain experience and skills they continue to challenge themselves by choosing to paddle more difficult water.

Peter: I guess I don't have a desire to do bigger water just for the sake of doing it. I think I'll probably do bigger water as I feel more comfortable in my abilities and if I'm on a trip where there is bigger water, then I'll feel comfortable in running it. But I don't have a desire to run the Stikine Canyon and other rivers right now. (p. 16)

Ted: Yeah, like I wouldn't even touch the stuff I'm doing right now. Before I'd just say, Screw that, you know. But now I feel that I can do it and I know I can do it. (p. 27)

The kayakers want to maintain what Csikszentmihalyi (1990) refers to as flow: the pleasant satisfying state that occurs when skill matches the challenge presented by the activity. If the challenge is too easy, boredom results and if it is too difficult, anxiety is seen to be the outcome. Choosing the right risk experience is the first step in handling the risk. Once the decision is made the next step is connecting the strategies needed to maintain control and realize a successful experience.

Realizing a Successful Experience

Realizing a successful experience requires many strategies that interconnect. For the sake of clarity, these will be separated in to three phases: assessment, planning, and implementation. The previous sections have discussed the risks involved in the experience and the feelings these risks engender. The importance of an accurate assessment of the risk situation and the kayakers' skill level was seen to be critical in choosing the right kayaking experience. This section describes how the kayakers conduct the assessment, assemble the plan, and put the plan into action.

Assessment

There are three areas that need careful assessment: the river environment, the skill level of the kayakers and the equipment.

Assessing the environment. The kayakers survey the river identifying potential hazards, looking for a safe route down. Ted describes some of these potential hazards.

> You have to find a route. You just can't paddle down river. 'Cause this could lead to an undercut and this could lead into a log. 'Cause in Williams there's so many little boulders here and boulders there and the water's running each different way. And sometimes it lands on a big thing of rocks and sometimes it goes under another cut. (p. 17)

Ted shows an awareness of the strength of the river current. He knows the current is capable of drawing a paddler into a hole or log. He looks for the route that will challenge him but also one that will be safe.

> I find that when you're going down the river you are finding the tongue. It's like the water's all green and on the sides it's kinda white. You want to stay on the tongue. You want to stay away from the actual thrashing white you know. (Ted, p. 18)

The kayakers say that the cardinal rule when assessing the environment is don't paddle beyond what you can see. The river bends and twists its way along. To see around these bends

the kayakers have to eddy out of the current and study the river, or if the situation warrants, pull their kayaks to shore and walk down the river.

"Even if you've been on the river a million times just, you know, get out of your boat and check it again. 'Cause you never know." (Ted, p.17)

Mary describes how they assess the river from the shore. This is not a task that is taken lightly. The kayakers value an accurate assessment of the environment and they are willing to take the time necessary to ensure a successful experience.

> It's a lot of knowing what's coming up. So even that other, that drop, Sue's drop that I decided not to. It wasn't that I just came up to it and went around it. I did go and look at it. Like I'd been there a couple of times and seen other people run them and so and people who did do it. We stand there for a long time on the edge of the river and we throw things in and watch what happens to a piece of wood and everyone looks at this and says, "Okay, I think that line's going to be good." Or "I think that way is going to be good, no don't go there, this might happen." (Mary, p. 3)

Knowing what to observe requires experience. The above example shows that the assessment of the river environment is a group process. Everyone has an opportunity for input. The kayakers observe the piece of wood in the current. They are able to see the effects of the current on the piece of wood. They look for a line or route that will get them through the white water without coming to any harm. This is an excellent learning opportunity for a less experienced kayaker. They observe, listen and learn from the "gurus" on the river.

When paddling an unfamiliar river, the kayakers gain knowledge of the accessibility, the terrain and the gradient by reading maps. Reading a map, however, does not cancel the need for careful ongoing assessment. Jim describes how he paddles an unfamiliar river: "Obviously you paddle a river like that different, much more conservative. You get out of your boat a lot more to look at drops. You are aware that you are in new territory" (Jim, p. 15).

Being aware that they are in new territory indicates a heightened awareness of the need for continuous observation. For the less experienced kayaker all rivers are new territories. The hazards change with the level of the water and the time of year so that even if the kayaker has paddled the river before, there is no guarantee the environment will be the same. Paddling with

kayakers experienced in the river environment is a definite advantage for the novice kayaker. River assessment skills are critical for a successful experience. Developing these skills requires exposure to the river environment. In addition to the river-reading skills, the kayakers need to be able to assess their technical abilities in paddling and rolling.

Assessing skill level. Assessing the kayaker's level of skill is fairly straightforward. If the participants do not have the skills, they are unable to navigate the river. The river gains control and quickly flips the kayak. The paddler must then be able to roll back up or do a wet exit and swim. Swimming, as discussed earlier, is not always the kayaker's best option. A kayaker must therefore have a "bomb proof" roll to paddle the river successfully. The less experienced kayakers describe how they assess their ability to roll.

Betty: There's always a time at first where I almost have to practice a roll to see if I could do it in the flat water to make sure that I still remember how. (p. 7)

Ted: Oh yea, every time I go on the river, the first thing I do is roll. Every time. I don't care if it's shallow. If it's shallow, I just put my head under, have a drink of water and you know, push myself up, 'cause, you know, a lot of times you don't have room to roll. And the most important thing in the roll sometimes is just to push yourself up off the water.

The less experienced kayakers are often unsure of their abilities. They realize the importance of knowing that they will be able to roll up when they need to. The practice roll is their way of assuring themselves that they do have the skill to roll back up.

More experienced kayakers have confidence in their abilities. Because of many previous experiences they know they have the skill to roll in almost any situation. The roll technique, instead of being a step by step process, head down and hip flick, becomes a "natural movement that corrects itself" (Peter, p. 13). Jim does not practice in a formal sense but says that as he drifts down the river he does a roll just to remind himself of the feel and to reacquaint himself with the harsh reality of the cold water. He says that it provides an incentive to keep upright. Jim also describes the roll technique as a natural movement. He admits that at times his roll is not as smooth, strong, and automatic as he would like. At these times, he says he has to

reanalyze his roll step by step and then practice. This would suggest that Jim's performance fluctuates, from the Dreyfus Theory's (Dreyfus & Dreyfus, 1986) proficient level of skill development to the expert level, depending on the situation.

At times the kayakers rely on more experienced paddlers to assess their skill level for them. "They know how well I can paddle and they can always help me gage what I can do" (Mary, p. 1). The kayakers are expecting the more experienced kayakers to assess their abilities in relation to the present situation. They trust the experienced kayaker will keep them safe. They trust the more experienced paddlers will not let them go into situations where they will be unable to control their actions. This places a lot of responsibility on the experienced kayaker. This relationship is explored more fully in Chapter 5.

Careful, accurate assessment of the river environment and the skill level of the kayakers are critical. Another critical factor requiring assessment is the kayakers' equipment. The kayaker must have a sound knowledge of all the kayaking equipment that may be required for a successful experience.

Assessing the equipment. The basic equipment necessary to get the kayakers into the white water environment is the kayak, paddle and spray deck. The boats must be fitted to the kayakers. If the boats are too loose it is difficult for the kayakers to do the hip flick, which is necessary to roll. If their boat is too small they will develop cramps in their hips and legs and may have difficulty exiting the boat. The spray deck must be tucked around the cockpit securely to keep the kayakers in their boats when they flip but it must be loose enough to be easily pulled off for a wet exit. The spray deck has a grab loop on the front to allow the kayaker to pull the skirt off quickly. Kayakers are careful to make certain the grab loop is not tucked inside. The following example shows what happens when the spray deck is too tight and the grab loop is on the inside.

> I had a really tight spray deck on and I couldn't get out. I was upside down and I got both my heels in the cockpit and it still wouldn't come off so I couldn't exit the boat.

> Eventually I just ripped my way out of the thing and I had big bruises and stuff all over my knees 'cause I just had to like rip it off. (Jane, p. 8)

The kayakers need to know how their boats handle in different situations. The following examples show how the differences in boat design and weight affect the way the boat handles.

> Peter: You have to pack your boat heavy, you've got two weeks worth of gear in it. Boats handle a lot differently when they are fully loaded. I was borrowing someone else's boat so it was a new boat and it didn't handle the same as mine. I'd taken it out a week before and gotten use to it. (p. 2)

> Ted: You can surf better in smaller boats and it is just more fun. I was in my bigger boat before this little one, hey, and I was leaning back a little bit too far and it didn't really matter because you had so much more back on you. But now I started leaning back and I would flip every time. (p. 9)

Peter is experienced enough to know his new boat will handle differently. To assess this difference he takes it out for a trial run. Initially Ted is unaware that his new boat will handle differently. He is unable to accurately assess his equipment. Because of this inaccurate assessment of his equipment, Ted experiences an unsuccessful trip down the river and begins to question his kayaking abilities. This once again points out the difference experience makes in assessment abilities.

The paddle is necessary to maneuver the boat down the river. The kayakers sometimes carry a 'break-down' spare paddle, especially when on remote trips. They must be able to keep hold of their paddle when they flip, as they use the paddle to help right the kayak. If a kayaker loses his paddle he must rely on his companions to retrieve it for him.

In addition to the basic equipment the kayakers need to know about the special equipment required to keep them safe. When Ted was first learning to kayak, he wore his rock-climbing helmet, a helmet designed to protect the top of his head from falling rocks. It is not designed, as is the kayaking helmet, to protect the back of the head. The lack of awareness of the proper equipment could have had serious consequences for Ted.

The kayakers require knowledge about the type of life vest used for paddling. They need a life vest that is buoyant enough to keep them afloat yet not so bulky that it interferes with

paddling. The rivers of the Pacific Northwest are always cold and hypothermia is a very real concern as the kayakers spend considerable time in the water. The life vest alone will not protect them in the water. The kayakers need to know about the type of protective clothing.

> The appropriate clothing depends on the temperature of the day, temperature of the water and the time of the year. So in the spring, it may be hot but I know the river's quite cold and I wouldn't be able to stay in the water long with shorts on, like shorty wet suit. So I would wear dry pants and maybe some thermal wear underneath. If I have a good swim, the body would be able to survive in the water for a period of time. I wear a life jacket and make sure it is a good one. That's what I wear, a pretty good one. That is standard gear for kayakers and then a dry top, which seals out the water if you do swim. (Peter, p. 18)

In spite of all precautions there are situations which require emergency rescue. The kaykers rely on their companions for this rescue. A thorough knowledge of rescue techniques and equipment is necessary. Kayakers need to know how to help companions flip up with an Eskimo rescue. They need to know how to tow a swimmer to shore using their kayak or rescue a swimmer from shore by hurling a throw bag to them. A throw bag is a bag attached to a rescue line used to haul the swimmer into shore. Knowledge of how to set up a block and tackle system may be required to rescue a kayaker from a logjam. The following equipment is needed for these rescues: a rescue rope with a carabiner on the end, which is tied to their waist, extra rope, carabiners and pulleys. Another practical piece of equipment carried by the kayakers is a knife. Peter describes situations where this would be useful.

> If you come into a fish net on the river and you end up swimming and you get caught in a gill net on the river, you could cut yourself out. Or if you need to cut a rope quickly, like if you were doing a river rescue and the way the ropes were set up, it was putting someone in a dangerous situation, you could cut away the boat. (Peter, p. 18)

The kayakers attach a whistle to their life vest, which enables them to communicate an all clear or an upcoming hazard to the other kayakers. First aid supplies and survival foods such as power bars are also included in their list of equipment. The extra food is welcomed if the kayakers have a long hike out.

Rescue operations do not always require fancy equipment. Ted describes a situation where he gains awareness of the usefulness of duct tape.

> 'Cause you know, we've broken two boats this year in Williams and so my buddy's going down in a full boat of water and its kinda dangerous 'cause everything you hit you know, is going to rip it that much more. So if we would have had duct tape we could probably patch it up with a stick or something. (Ted, p. 32)

Acquiring all the safety equipment is expensive. The less experienced kayakers admit they do not possess as much equipment as they would like but they state that they are gradually gathering the "right gear". This is another reason that it is advantageous for less experienced kayakers to paddle with the better-equipped, experienced kayakers. Ted succinctly states the importance of possessing the right equipment: "You gotta have equipment. You gotta know what to do"(p. 28).

The equipment has been described. Knowing what to do includes not only being able to assess the situation and skill level; it also includes devising a plan of action.

Planning

The kayakers plan carefully for their kayaking experience. They base this plan on the "worst case scenario". This means that they try to anticipate potential problems and they develop strategies to address the problems. The following example shows how the plan is developed.

> Everything has to be done ahead of time. Like you don't; the shit doesn't hit the fan and you have no idea what to do. Before the shit hits the fan, you already have a plan of what's going to happen if a guy swims. You get to that guy before he moves around that corner. You don't know what's coming up. You have everything solved and what you plan to do before the problem happens. You have to have a plan. (Ted, p. 32)

Ted is continually observing what is happening around him. He is looking for potential problems and developing solutions. He is aware that situations can change quickly. Some of the planning is occurring during the run while other plans are made before the run starts. The pre-planning is usually the role of the more experienced kayakers. The following example is a plan to negotiate an area of white water.

> Usually if we feel pretty sketch about a certain place, we'll have one guy in a boat and one guy on shore to throw a rope. So like if this guy is swimming, one guy can catch him. And if he is not swimming, if he is stuck in a hole and his boat's going down the river, one guy can get his boat and one guy can throw a rope to him. So there should always be some guy on shore with a rope that can actually pull him out instead of just being in his boat and being helpless in paddling up and ending up in the same predicament. So there should always be a person on shore that can get to him if he actually swims. (Ted, p. 20)

Betty describes the plan that was devised to successfully navigate the Bulkley Canyon.

> Right if I was to run down, say if I was to run Featherbed with a group of advanced paddlers, they'd all run down first and they'd sit themselves on either side of the river waiting for me to come through. (p. 5)

Featherbed is a Class IV rapid and as such is one of the most difficult on the trip. The kayakers name the rapids because of their particular qualities. Featherbed is an area of white frothy aerated water. Because the water is aerated it lacks substance; therefore the kayaker may have trouble using a slap brace on the water to keep from flipping. In the above plan the more experienced kayakers pick their route down through the rapids first. The less experienced kayakers have the opportunity to observe the route and the actions taken by the experienced kayakers. The less experienced kayaker can then prepare for the run. Knowing that there is a more experienced kayaker waiting to rescue her, should the need arise and having a plan, gives Betty the confidence to do the run.

Jim uses another approach when paddling with less experienced kayakers.

> They [less experienced kayakers] may need some advice and reassurance. In critical situations an experienced, reliable paddler should "sweep" the river. If a paddler broaches or has other problems, he is on his own when they are the last one down a run. This is not a good idea in some situations.

Peter's description shows that experienced kayakers station people below the rapids to prepare for a possible rescue as well. "We had guys down river with throw bags prepared to assist with a rescue, especially if you get into, you know, some of the holes in the river that may grab you and keep you there for a while." (Peter, p. 3)

The experienced paddlers know that they too can run into potential problems. The kayakers respect the river environment and know they have to be prepared for the worst case scenario. When they are prepared for any problem, they increase their chance of having a successful experience. Evident in much of the discussion on planning was that kayakers do not run the river on their own.

Implementation

The implementation phase is where the successful experience is realized. A successful experience is one where the kayakers have confidence in their ability to run the river, where they feel challenged and most importantly, where they have a favorable outcome. Betty gives an example of what she considers to be a successful experience.

> I really think I've had a really good experience when I've been successful at getting down a river. Like when I went down the Bulkley Canyon and not having to swim the entire time. Like that was a good experience for me. That showed me my skills and my ability and to know that I could get through that without any help from anyone else. I was really feeling in control over what I was doing. (Betty, p. 1)

Betty matches her skills to the experience and is rewarded by a successful run. To ensure a successful run Betty goes with a group of more experienced kayakers. The more experienced kayakers support her assessment of the environment, her skills and her equipment. They establish a plan for navigating the river. They ensure that there are kayakers prepared to rescue Betty, should the need arise.

Implementation of the plan also requires that the kayakers control their fear and remain focussed. This is not always easy.

> Yeah, if you're in a hole and it's flipping you around and everything is pretty much thrashing you everywhere and you gotta focus pretty much on your actual stroke. I mean you can do it in pretty calm water but when it gets to the real turbulent water, you just start panicking. You gotta go for air, right? So you just try to get a breath, right? And just start from scratch all over again. That's what I find. ---- You just gotta really clear your head and just stay focussed on what you have to do, 'cause it all comes down to what you have to do when you're in the water. There is nothing else. (Ted, p. 33)

Ted's description points out that the most important consideration for a successful experience is the ability of the kayaker. Kayakers must know what they are doing, they must be able to concentrate and stay focussed on the task at hand, and they must be able to control their fear.

Summary

The discussion in this chapter reveals the reality of the risk situations in the sport of white water kayaking. The feelings experienced by the kayakers when they are in these risk situations are exposed in their descriptions. The descriptions demonstrate that the best moments occur when the kayakers are stretched to their limit in a voluntary effort to accomplish the challenge. The kayakers' entire consciousness is focussed on the challenge at hand. When they are successful in meeting the challenge, they appear to experience " flow" (Csikszentmihalyi, 1990). Their beliefs of self-efficacy are shown to increase, enabling them to enjoy the feeling of being able to control their actions in the midst of potentially dangerous forces. Experiencing the beauty of the wilderness environment is important, but more important it is the intense focus: the sense of exercising control in difficult situations which lures the kayakers to the sport.

The kayakers' narratives reveal them to be considered decision-makers handling the risks in the situations rather than irresponsible risk takers. Their risk-handling behaviours involve developing skill and knowledge of the river environment and their abilities. The kayakers wear protective equipment and gather together rescue equipment. They practice frequently, gaining experience in different conditions. They develop the ability to identify the potential risks and carefully weigh the benefits of the risk activity against the potential losses. As the kayakers become more experienced, the quality of their risk decision-making improves enabling them to be more selective in choosing the risk experience. Examples of skilled intuitive decision making are given as well.

Individual and situational factors that affect the kayakers' risk behaviour are identified. Some of the kayakers express a greater tolerance for risk and therefore engage in higher risk behaviours. Their tolerance for risk does not appear to be a factor in itself; rather their age, sex, and stage of life and their beliefs of self-efficacy affect the kayakers' risk tolerance. The strength of the kayakers' beliefs of self-efficacy are key in determining their ability to control fear and identify options.

In the kayakers' descriptions of the kayaking experience, the social nature of the experience is revealed. This social environment is explored more fully in the following chapter as are more of the situational factors that affect the kayakers' risk behaviour.

CHAPTER 5

The Social Environment of White Water Kayakers

This chapter explores the social and cultural environment of white water kayaking. The chapter begins with a discussion of the social organization of the kayaking group or team. It examines how the kayakers form groups and identifies the qualities required for inclusion. It looks at the relationships between group members, identifying gender issues and issues of liability. How these issues affect the kayaker's learning is discussed. The chapter moves on to discuss the informal rules of conduct that promote effective group functioning. These informal rules will be shown to guide the leadership of the group and the behaviour of the team members. I will show that enforcement of these rules can be challenging for all kayakers, especially when the rules support conflicting beliefs and values.

A Team Sport

In the initial examination of the interviews, white water kayaking was perceived to be a solo activity. One individual, alone in a kayak, challenges the river environment. The kayakers' descriptions of the sport indicate that they choose the kayaking experience to test their skills. It is a personal challenge. The comments from Ted: "No one is going to paddle the river for you" (p. 38) and Peter: "I'm learning to do my own game" (p. 14) supported this perception. These kayakers appeared to rely solely on their skills for a successful kayaking experience.

On closer examination, the concept of white water kayaking as a team sport emerges. The kayakers describe working together to achieve a successful experience. They describe instances where they rely on their companions for rescue. They describe instances where the kayakers as a group decide on the route down the river and instances where the less experienced kayakers rely on the more experienced kayakers to assess their skill level in relation to the

situation. The kayakers' descriptions indicate that the presence of other kayakers can increase their confidence in their abilities to survive the kayaking experience. An effective team improves the likelihood of a successful experience for all the members of the group. The effectiveness of the team depends on the size of the group as well as the characteristics of the team members.

Team Size

The kayakers paddle in groups that range in size from two to 25 people. Groups of up to six people are the preferred size, although Jim, an experienced kayaker, at times prefers paddling alone or with one other person. "Running a river with only yourself or one other can be a very intimate and powerful experience as there're fewer distractions, you can be more focussed" (Jim, p. 17). Safety, crowding and group interactions are the reasons the kayakers give for their preference. "Just to run two people down a river is more difficult to deal with emergency situations, so three is a better number or four" (Peter, p. 13).

The kayakers love the sport because of the wilderness environment. When there are too many people on the river the kayakers say that their enjoyment of the experience decreases. Crowding can also be a safety factor. There is a limited amount of space in the river environment so it is important for all members of the group to be aware of the location of the other paddlers.

> You gotta make sure that if you go down the river and there is two people in that eddy and there is only room for two people, what are you going to do? You can't knock those two guys out and you got to run what ever is above you hey? So you gotta do a lot of signals and you gotta make sure there is room for two. You gotta make sure; you always gotta spread apart. You know it's a team sport for sure. (Ted, p. 19)

The kayakers are functioning as a team. Each is conscious of the actions of the other members. They communicate with each other during the run. Communication amongst the group can be a problem if the group is too large. Jim says that personality conflict tends to multiply rapidly when the group consists of more than six people. His comment suggests he has

experienced such conflict when paddling in larger groups. In a larger group of experienced paddlers, where they are all testing their limits, wanting to do their own game, they may not always be willing to work as a team. Jim justifies his decision to occasionally paddle on his own.

> I've been at it long enough that I can look at an objective risk and decide whether or not I'm going to paddle that. I'm going to walk around it or I can see the route down that I feel comfortable in and if I don't feel comfortable, I'll get out of my boat and I'll carry my boat. So I'm just able to look at risk now and decide for myself whether it's truly risky or not. (Jim, p. 2)

Jim is an experienced kayaker. There are times when he prefers the solitude of a wilderness experience. He is confident in his ability to assess the river environment and his skill level. His confidence allows him to feel comfortable kayaking on his own. The less experienced kayakers prefer the company of other paddlers as they lack confidence in their abilities to handle all situations. The less experienced kayakers need the support of the other team members.

The quality of the kayaking experience is affected by the choice of team members. Because of the informal nature of the sport, the kayakers say that this choice is not always up to the individual. Often someone starts making phone calls to kayaking friends. At times the group forms at the riverside and whoever happens to show up at the river joins the group. The kayakers admit they do not always know all the people in the group. This can sometimes be a cause for concern.

> Sometimes you want to choose. You want to keep the group amongst the people you know and you know what they're capable of. That's more important for the more difficult rivers. For the easier rivers it doesn't matter. If you show up that's great. You need new people and new experiences. (Jim, p. 3)

When the kayakers choose their companions they want the right people.

The Right People

The primary quality possessed by the right people is a concern for the safety of all team members. The kayakers with less experience look for other qualities as well. For them the right people are those who can accurately assess the less experienced kayakers' skill level and decide

whether they are capable of running a particular river. The right people are those who have the skills to rescue the less experienced kayaker, should the need arise. They are people who are comfortable with this responsibility. Betty explains: "They might have to be responsible for rescuing me and they usually tell you whether they are comfortable with that or not" (p. 3). Ted says, "I like to go out with a person who is pretty knowledgeable in rescue and just good paddling, so I don't have to worry about him as much as myself" (p. 2).

Ted is gaining experience as a kayaker. He still worries about the river challenges. He has to concentrate fully on his own actions and is therefore not able to look out for the less experienced kayaker. He is not totally confident in his ability to get down the river without the need of rescue himself. He needs to know there are competent kayakers available to perform a rescue operation. He relies on the skills of the right people to help him realize a successful experience.

Peter has developed the skill and knowledge to get down the river but he still is not yet comfortable accepting the responsibility for less experienced kayakers. He provides an example of his limited ability.

> I think there are like some new paddlers. I'm not totally comfortable in my abilities to do river rescue and to recognize their abilities. And I just haven't had enough rescue experience in dealing with people in the water where I would feel comfortable in actually paddling with them, because they may rely on me to do the rescue, where I'm not sure of my total abilities. (Peter, p. 13)

Peter and Ted's comments show that inexperienced kayakers, even when they are concerned for the safety of all team members, do not yet possess the skill and knowledge to be considered the right people. At their stage of learning they prefer to paddle with people who do have the skills. Mary's comment, "I had the right people with me so I was able to do it" (p.1) shows that having the right people as companions can increase the confidence level of a less experienced kayaker encouraging him/her to try new challenges, to push his or her limits.

Experienced kayakers possess the skill and knowledge to be considered the right people themselves. They prefer to paddle with others who possess common sense and a similar tolerance for risk. They, like the less experienced kayakers, prefer to paddle with people who value a successful experience for all team members. A successful experience as described in the previous chapter relies on skills, experience and good decision-making abilities. The kayakers are also concerned with identifying and avoiding the wrong people.

The Wrong People

The kayakers describe the wrong people as the risk takers, interested more in their own fun than in the welfare of the group. They are the kayakers who race ahead down the river with no concern for their companions. They lack good judgement. They are paddling for the adrenaline high. The wrong people put themselves at risk as well as the rest of the team members. Ted issues a warning about the wrong people. He says: "Beware of the adrenaline junkie. He is not concerned for your welfare. He will push himself and you to go for the high" (p.38). Peter has met this type of individual too. "I have paddled with people that I wouldn't recommend anybody learn from 'cause I think they'd probably push people beyond their limits or not make you realize the risks" (p. 5). Paddling with the wrong people increases the risk of the adventure, especially for the less experienced kayakers who may rely on the wrong people for direction.

Jim because of his many years of kayaking experience is able to identify a less obvious attribute of the wrong people.

> The stretch of the river must mesh with the paddlers. You obviously don't want someone who doesn't know what they are doing, who is new to the sport. But more importantly perhaps some people just seem to be tuned into what's around them. They seem to be more aware of their environment and some people who have been paddling for a while; they just don't seem to be aware of the risks involved. They just don't seem to be able to look at a river and decide I should go here or I shouldn't go here. (Jim, p. 3)

The experienced kayaker looks at the river environment as a whole, in tune to the subtle warnings learned from many trips down the river. Jim earlier described this feeling as Zen like. The less experienced kayakers rely on the conscious identification of hazards to warn of impending danger. They have not "tuned in" to the environment as a whole but rather look at the river current, rocks, and water level as separate hazards. Some are only concentrating on their own actions and are not aware of the need for ongoing assessment of the environment. The inexperienced kayaker or one who is not in tune with the environment can be a liability to the more experienced kayaker.

A Kayaker's Liability

The less experienced kayakers may be considered to be liabilities when the experienced kayakers are looking for a chance to test their skills. Having a less experienced kayaker as a companion can have a major impact on the nature of the trip.

> Taking a more beginner person out on the river, there is always the risk that the experienced kayaker is going to have to do a long rescue or going to miss a certain play spot or something on the river. And also if you're taking a beginner who's never been down a certain river before, you're going to have to guide them down. Usually you take the easiest route down the river, rather than doing what they want to do and going down like more drops or a more difficult line. (Betty, p. 4)

When the experienced kayakers consent to paddle with less experienced companions they are accepting responsibility for their safety. Jim says that at times he chooses not to accept this responsibility. "To be honest, I have backed out of some paddles that at the time I just didn't feel like going with a group of beginners. Right now I just don't want to deal with that" (p. 23). He prefers to have a trip where he can concentrate on his own actions and not have to worry about the actions of another.

The less experienced kayakers realize they can be a liability to those with experience. They make certain the experienced kayakers are informed of their skill level. "I always make sure I would tell them my skill level and make sure they know that I'm not going to roll every

single time" (Betty, p. 3). Betty is telling the more experienced kayakers that she is expecting them to be responsible for her. In doing this she is giving them the opportunity to choose whether to accept her as a teammate. She confesses that she always brings along cookies as a bribe, so the experienced paddlers will be more inclined to include her on the team. This suggests that the less experienced kayakers are indebted to those with more experience, when they are chosen as companions.

This knowledge of being a liability affects the actions of the less experienced kayakers. They try to limit the number of times they require rescuing by limiting the amount of risk activities they choose. In this situation the less experienced kayakers are not drawn forward to engage in new challenges but rather held back. The less experienced kayakers provide examples of situations where they limit their risk activities.

Betty: Maybe we were intimidated by thinking: "Oh, I'm going to get on this wave, I'm gonna sit on it for one second, I'm gonna flip over and have to get rescued or something." (p. 5).

Alice: I hadn't felt really comfortable before because I knew they always had to chase me every time I flipped over because I couldn't roll up. (p. 2)

The kayakers' inability to roll appears to be one of the main reasons for incurring the liability label. The desire to overcome their liability status provides strong motivation for learning a "bomb proof roll."

> As soon as the guys saw that I could roll in the river, like no matter where they put me, no matter what happened, I seemed to be able to roll up. That made them a lot more happy taking me with them. Like Bill would say: "I'm no longer a kayaker's liability." (Mary, p.6)

Jim presents another reason for deciding the liability status of companions. "Equally important, if not more so, is the ability to know and listen to one's present limitations" (p. 3). Another factor that can have an effect on kayakers' risk decisions and actions is the gender of the team members.

Gender Issues

The kayakers describe differences in behaviour when the gender mix of the group changes. When the entire group is of the same gender there is an increase in tolerance for risk. Each group gives a different reason for this behaviour. When the groups are mixed, the female kayakers rely on the male kayakers for support and guidance.

The female kayakers say that when they go out together they are not afraid of performing poorly in front of the other women. Because they are not afraid of failing they try higher risk activities, activities where they may flip over. Betty describes a situation where the lack of fear allows her to tolerate an increase in risk activity.

> Actually it is a lot different when a group of women go out. For example a group of guys went off and did the Firth River and there were no intermediate paddlers around here for a little while. Myself and a lot of the newer paddlers in Terrace and Kitimat, most of them women, would go off on our own and do either the Kitimat or the Wedeene. I think we took a lot more risks and got into a lot more of the play situations as a group of women, instead of staying back and watching the men, like, "Oh that's too difficult for us" and sit in an eddy and watch them play. We would actually say, "Oh that looks like a fun wave. Maybe we should try it." And so we would go off and we'd play in these waves that we would usually sit and watch the guys do, right. (p. 5)

The group support enables the women to be more adventurous. They do not feel they are a liability to the other kayakers as they are all at the same level. There is no fear of failing. Betty describes another situation where a male notices this difference in behaviour when he joins the group of females.

> Dave made an interesting comment. He came out on the Wedeene with us one day and he said that it's great paddling with a bunch of women paddling together because you guys have such less egos than men. Like you guys will talk about how to get on the wave, or will cheer each other on or something. Whereas men, he seemed to think, were more interested in their own performance (Betty, p. 5).

The perception that the men are more interested in their own performance is reinforced by Jim's comment. "It's [having women along on a trip] a nice leveling on the testosterone driven aspect of the sport." This comment seems to indicate that when the group consists solely of males, they

are primarily concerned with paddling at their own level and improving their own performance. They push themselves to overcome the self-imposed obstacles. The women, on the other hand, coach each other and encourage each other to try new activities. They are interested in each other's performance. The women are able to relate to the other women. Alice says, "If she can do it, I can try that" (p. 9). This is especially so when the female kayakers are learning from a female instructor.

> And because she's also a woman and she's had some of the same issues so she showed me how to do stuff better. She said: "Okay, now I want you to punch out in front of your face a bit more and you have to rotate your body more and you'll get more power from your back and your stomach, not just your biceps, which you don't have any. (Mary, p. 15)

The physical differences between the sexes require the women to develop good stroke technique to compensate for their lack of strength. Mary says that the men are better able to get where they want to go on the river without worrying about it.

When the groups are mixed the women rely on the men to look out for them. Mary says, "It's like they're my big brothers and so I definitely feel like they definitely look after me" (p. 15). The men also say this:

> They [women] really look to you for direction, where, you know, guys might just watch you and go ahead and take higher risks on their own. I would say there is a lot more sort of fear of situations or I guess maybe they would be a lot more worried about certain situations and be more what ifs and making sure they're prepared. [They would be] a little bit more nervous on certain parts of the rivers than maybe some of the guys would when they are learning. There is definitely a difference in their comfort level initially so you have to instruct them and develop the teaching techniques and they are like a lot slower developing their comfort level, a lot slower than guys. (Peter, p. 4)

The fear of failing and the fear of being a liability to the male kayakers may cause the women to appear less tolerant of risk situations. It appears that the women sacrifice the freedom to risk without fear of failure for the feeling of safety that comes when paddling with a group of males. Peter's comments suggest that males experience lower levels of fear and have a higher tolerance for risk than females when they are learning to kayak. The male kayakers do not appear as fearful of failing in front of their male companions.

In spite of the differences in described behaviour when the gender mix is changed, the kayakers insist that gender is not an issue when it comes to choosing companions.

Ted: All I see is just a paddler in a boat and if he can rescue me, I can rescue him. And how is he going to affect my line. Do I have to rescue him more or do I have to pay attention to what he is doing? It's basically the skill of the paddler. It's nothing really against sex or how they perform. (p. 29)

Jim: I know of nobody who doesn't like having a mixture of the sexes on a trip. It doesn't matter if it's male or female, as long as the person is capable of safely getting down the river. (p. 8)

These examples reinforce the value that kayakers place on skill, experience and safety for all members of the team. The composition of the team is the first step in building an effective team. The team must follow rules of conduct to ensure that it functions effectively.

Rules of Conduct

The kayakers' descriptions show that the attraction of the sport of white water kayaking is the challenge of the wilderness environment and the freedom from the formal rules and regulations that guide many other sports. Their descriptions also show that in spite of a lack of formal rules there are unwritten rules that guide the actions of the team members. All kayakers must follow these unwritten rules of conduct to be accepted by the group. These rules hold the team together and enable it to function effectively. These unwritten rules govern the leadership of the team and the behaviour of the team members. The rules also govern accepted safety standards for the team.

Team Leadership

The leadership of the team is dependent upon the experience level of the team. An experienced team does not have a single leader as Jim's description of his experienced team shows. "The group I was with this summer, there were six leaders and everyone has their own opinion because everyone was an experienced paddler" (p. 7). In this type of group the

individuals have the experience to be able to pick their own line down the river. They are able to assess their own abilities and choose which risk situations they will accept. They do not require a leader to guide them down the river but they do rely on the other team members for companionship and for support, should there be a need for rescue.

When the team members are all at the same level of experience they take turns going first. The lead position is the most dangerous as no one can be completely certain of how the current of the river will impact on a planned course until they watch someone go down. One of the kayakers likened this position to "first tracks" (Ted, p. 20). This is an expression used in skiing when a skier makes the first tracks in the fresh powder snow. The increased risk of this position brings an added thrill.

In a group where the kayakers have mixed levels of experience, they state that there is nothing obvious, but the more experienced paddler will pick a route and the others will follow. Following an experienced kayaker provides an excellent learning opportunity. The less experienced kayakers can observe the route and the techniques the more experienced kayakers use to safely navigate the river. The more experienced paddler can wait in an eddy and prepare for a rescue if the less experienced paddler fails to navigate a particular section of the river.

Because the leadership position and the rules of conduct are informal, the experienced kayaker is reluctant to appear the "big boss" and enforce rules on the less experienced kayaker. "Like it wasn't said you guys shouldn't do this or anything. All kayakers are respected as peers because they are doing the same kind of thing " (Mary, p. 18). The experienced kayakers respect the less experienced kayakers' decisions but they also feel some responsibility for the safety of the less experienced kayakers. One of the experienced kayakers describes how he handles this situation.

> I knew this one guy hadn't been paddling much and I knew that there could be possible danger. I do not like saying you cannot come. So in the first part of the river, I know the river quite well, I've paddled it a number of times; I actually set him up to get into trouble. But I knew it was manageable trouble. And after he got into trouble there,

> which was to me quite predictable, I felt, "Okay, now I'm going to say something." And I actually suggested after that point that if he couldn't handle that little problem, what's downstream is going to be very dangerous. And so he walked off. He carried his boat up through the forest up to the logging road. (Jim, p. 4)

Rather than make the decision for him, the experienced kayaker puts the less experienced kayaker in a position where he is forced to re-examine his previous assessment of his abilities. This makes the experience an effective learning opportunity for the less experienced paddler.

There are times when a less experienced paddlers "freak out" because they've gone through a couple of swims, they are cold, nervous and they become a danger to the other team members. At these times the more experienced paddler assumes the leadership role. The leader explains the situation and suggests that perhaps it would be better for the less experienced kayaker to walk out. Mary gives an example of being in just such a situation.

> I'd fallen out of my boat one day and I wasn't feeling so great and he [an experienced kayaker] just kinda made a judgement call. He said, "I would really be more comfortable if you walked out of here." And, "Yeah, you can totally do it, but we'll come back next time and do it when you feel better." And he like made that judgement call and said like you can go ahead if you want to but I think you should walk out of here. (p. 9)

Mary says that she felt that someone had just given her an out. She had set herself the challenge of paddling that particular river. She was intent on meeting that challenge. When the more experienced paddler makes her aware that she is not in the best state to do it at this time and when he acknowledges that she does have the ability to do this section, it allows her to save face by making the smart decision and walking out. In this way she does not feel a failure but rather she feels pleased that she made the right decision.

The situation is a little different when the group consists of kayakers with similar levels of experience. In this type of group the kayakers make certain the individual is aware of the risks involved in a particular situation.

> Oh yeah, that's the first thing I ask, "What line are you going to take?" But you know, it's kind of a touchy subject, cause people don't really want to be told what they can or cannot do and I guess if a guy thinks he can do it, cause a guy doesn't know. (Ted, p. 25)

Once the kayakers are certain the individual is aware of the risks, they respect the individual's decision. They respect the individual's right to challenge the risks and they are prepared to rescue him/her should the need arise.

Team leadership depends on experience. The experienced leader assumes responsibility for the safety of team members. The leadership role is supported by informal rules of conduct, which govern the behaviour of team members.

Team Behaviours

The primary rule of conduct for the team proposes that all kayakers must work together to ensure the safety of the team members. The kayakers go as a group and stay as a group for the duration of the trip. As Ted says, "You gotta help your friends out and they gotta help you" (p. 19).

The concern for safety is evident at the start of the trip. The kayakers say that it is accepted practice to do warm up exercises prior to getting on the river. Jim says, "Nobody leads them, you just see people off bending and contorting themselves" (p. 13). The concern for safety is further evident in their equipment check. The kayakers say that it is an expected norm for everyone to do a mental checklist of all their equipment prior to an outing. They all wear helmets, life jackets and wet or dry suits in addition to carrying much of the emergency gear described in the previous chapter. Betty says, "You pretty much have to have all the equipment or else you're not paddling. Like if you're missing any of that stuff then you can't do the run basically" (p.16). On the more difficult runs, the kayakers say they check around to see who has the ropes and rescue equipment and they make certain the person who has them knows how to use them.

Experienced kayakers make exceptions to this rule. Jim admits that when the weather is warm and he is only out for a short run on an easy river, he may not always wear all the gear. He describes a situation where an experienced companion also makes an exception to the rule.

> I was surprised to tell you the truth, when we arrived and Joe went to get in and I realized he wasn't taking a helmet. He said: "No I'm not going to bother." At first I thought: "Oh well, that is interesting [and then I thought] let's go, because he is very experienced. I trust him implicitly. (p.27)

Jim is surprised because his friend is ignoring the primary rule of conduct. He appears to rationalize his acceptance of his friend's decision by focussing on his friend's level of experience. He respects his friend's right to make his own risk decision and so does not question the wisdom of his choice.

The less experienced kayakers learn the rules of conduct from the more experienced paddlers. They learn the rules by observing the actions of the more experienced kayakers and by listening to their advice.

> I was in a car once and we were doing a shuttle. One of the young guys was coming up with us and two of the older guys were in the back. They were just kind of talking about the paddling and everything and one of the older guys was just saying, "You guys are coming along really well and I am surprised at the amount you are learning." And then some question was brought up like: "How do you think your judgement is?" or to the effect like, "How do you think you're doing as far as making good judgement calls?" And it wasn't really said like, "You should be more careful." But it was kind of brought up like a discussion that they were able to like talk about it for a bit. And they got commended for the fact that they were paddling with other people and they just kind of supported like: "Yeah, don't ever feel bad if you want to get off a river or something. That is something that is good judgement. It means it will keep you alive in this sport." (Mary, p.19)

The experienced members of the group are encouraging the less experienced kayakers to examine their risk decisions. The experienced kayakers positively acknowledge the correct actions of the less experienced kayakers, developing skills and paddling in a group. The experienced kayakers verbalize an important rule of conduct. If a kayaker decides against paddling a particular part of the river, other kayakers will not only accept their decision, but they

will admire their good judgement. The informal rules of conduct do not condone kayakers persuading others to engage in actions above their level of comfort.

> They can't say, you know: "Oh come on, do it." I've said it a lot of times and they don't say anything. You know, you just can't. It's very important not to bug somebody if they're not going to do it, 'cause you have to do it yourself. (Ted, p.25)

If kayakers decide to sit out and just observe at a play area, their decision is accepted. The kayakers realize that people have different levels of comfort at different times. They realize that even though the team is there if a rescue should be required, it is the individual who has to paddle the kayak by him/herself.

The less experienced kayakers have not developed the skill or confidence to know when to question the risk decisions of the other paddlers. As described in the previous section the experienced kayaker is able to influence the risk decisions of the less experienced kayakers in a positive way. Mary expresses her concern regarding her ability to influence the risk decisions of other paddlers.

> I just sometimes wonder how to suggest things to people, 'cause you don't want to ever see them get hurt. For their sake and the sport's sake and you always look around and think: "God, we're 10 k's from anywhere. How the hell would we ever get anyone out of here?" (p. 20)

Mary is concerned for the safety of the other paddlers but is unsure of an acceptable way to address this concern. It appears that the less experienced kayakers when paddling together may increase their level of risk if they do not learn how to question the risk decisions of other kayakers.

Kayakers respect and admire other kayakers who possess the skill and courage to paddle difficult rivers. Even when the kayakers are putting themselves at risk, there remains a reluctant admiration for their courage. Peter is concerned that this admiration could be encouraging them to increase their level of risk.

> A lot of guys are quite amazed that they are actually running these things but I think that is almost in itself egging them on because they are running stuff that nobody runs their first year paddling and they are not having bad experiences. (Peter, p. 11)

The social and cultural environment influences the kayakers' behaviour. At times the informal rule of conduct that supports the value of a successful experience seems to be in conflict with the rule that supports the kayakers' right to a challenging experience.

Summary

In this chapter we saw how the kayakers are involved in communities of practice. These communities were formed for reasons of safety as well as companionship. Engaging in these communities of practice, the kayakers acquired skill and knowledge. The nature of the engagement was shown to affect the process of learning. When the kayakers were in positions in which they perceived themselves a liability to the group or in which they perceived themselves as responsible for the group, it inhibited their learning. Experienced kayakers were prohibited from seeking new challenges and instead guided the less experienced kayakers down the river, providing rescue when the need arose. The less experienced kayakers, aware they were a liability, restricted their risk taking activities to limit the need for rescue. In this way both groups were held back rather than being drawn forward.

There were, however, other instances in which the presence of experienced kayakers increased the confidence of the less experienced kayakers, encouraging them to try new risk activities. These instances appeared to draw the less experienced kayakers into the kayaking community in conditions that Lave and Wenger (1991) refer to as legitimate peripheral participation. The less experienced kayakers were drawn into discussions in which they were able to build up their own knowledge of the river environment and the social and cultural environment.

Issues of gender appeared to affect the learning process. Women's tolerance for risk was seen to increase when paddling with other women. The support of other women encouraged the kayakers to try new activities. When the instructor was a woman the female kayakers talked about how they understood the instructions more readily. Male kayakers talked about restricting their risk taking activities when they accepted responsibility for the safety of female companions. When groups of male kayakers paddled together they seemed to be more interested in their own performance than the behaviour of other kayakers in the group. They appeared to be engaging in their own personal challenges.

The less experienced kayakers were able to gradually assemble a general idea of what constitutes the practice of the community. A sound understanding of the skills and values of the sport were formed and communicated in the social interactions that occurred while paddling or driving to the river. The issue of safety for all members of the group was a value that was commonly supported and communicated. In their relationships the kayakers were also seen to value the individual's right to choose their own kayaking experience. These values were at times seen to conflict. The more experienced kayakers resolved this conflict by first ensuring the less experienced kayaker was aware of the potential risk. They then developed a plan to minimize the risk of injury. The less experienced kayakers were frequently unsure of how to address the conflict between supporting safety for all members of the group and the individual's right to freedom of choice. The kayakers' descriptions revealed that they considered risk-taking without regard for safety as unacceptable behaviour. Those who chose to disregard safety for themselves and the other kayakers were labeled as the 'wrong people' and were not socially acceptable kayaking companions.

This chapter has described the social and cultural environment of white water kayaking. It revealed how the manner in which the kayakers were engaged in this social and cultural environment affected the development and implementation of risk-handling behaviours. In the

next chapter we more fully explore the multidimensional process of experiential learning described by the kayakers.

CHAPTER 6

The Learning Process

The previous chapters have shown that the kayakers handle the risks by developing knowledge, skills and effective decision-making abilities. In this chapter I examine the process by which the kayakers develop these strategies. Langley (1995a) suggests a narrative perspective is a useful method to frame and communicate a student's skill learning experience. I therefore begin the chapter by telling Ted's story of his first kayaking season, a season where he experiences many challenges. As a result of these challenges Ted exhibits growth not only in skill and knowledge but self-awareness. The progression of the other kayakers' learning will be compared with Ted's experience and the positive and negative opportunities for learning will be identified. In this chapter we will see how Ted and the other kayakers are introduced to the sport. The kayakers' introduction to the sport influences the progression of their learning. We will see how some kayakers are actively seeking a thrill while others get into the sport quite by chance. Their tolerance for risk will also be shown to affect their learning. As we examine the progression of the kayakers' learning we will see that over time changes occur in their sources of learning. The specific skills required in kayaking are learned in different ways. These learning processes will be examined.

Ted's Story

The progression of Ted's learning is the most dramatic of all the kayakers' in the study group. In just one kayaking season, from May to October, Ted progresses from a being a novice kayaker engaging in risk situations often beyond his abilities, to being an experienced kayaker carefully choosing the risk situation. What follows is the story of that experience.

White water kayaking was not Ted's first exposure to a high-risk sport. He enjoys risk activities and the outdoors. Previous sports activities included backcountry skiing and rock

climbing. Ted was actively seeking a new risk experience when he bought his kayak and entered the white water environment. It was the month of May. He admitted, "We never knew anything when we first bought them" (p. 10).

Ted's Introduction to the Sport

Ted and his inexperienced friends introduced themselves to the sport. They did not receive any instruction in paddling or rolling techniques. They did not even know how to do a proper wet exit. They started kayaking in a shallow area of a lake, in about three feet of water. Ted said that if he was unable to roll he could always push himself up with his paddle. It was a process of trial and error. He was anxious to progress so he did not waste any time moving out on the river where he continued with the trial and error process of learning.

Ted's Initial Experiences

Ted swam frequently during his initial experiences. In this way he became familiar with the force of the river. At this stage of learning Ted claimed that he did not want to try too many new things. His primary goal was to get down the river. In spite of his fear of flipping his kayak Ted would try to surf on the play spots.

When paddling on the river, Ted and his friends met experienced kayakers who pointed out flaws in their equipment and gave them some tips on wet exits and roll techniques.

Ted: Basically, like when I first got my boat, I had a little rescue belt and I was clipping it onto my boat and people were saying, "Don't do that, if you get caught in a log jam or something with your boat, you're stuck with it." And I unclipped that. (p. 21)

> I was using my rock climbing helmet before and it was too high on my head and other paddlers were telling us, "Yeah you guys should probably get some more protective helmets." (p. 7)

> We found a lot of bad habits happening when we were going by ourselves. When we would pull our spray deck to swim, we were always sticking straight up. You are supposed to kiss the bow of the boat, so you don't get hit by a rock, but it was so deep there that we didn't care, you know. (p. 7)

> We met, I think John and Joe, in an eddy one time when we were in the Kitimat and they showed us, "Yeah when you roll, keep your head back a bit and you'll come up easier. (p. 14)

Ted admitted that these tips helped. He bought a proper helmet and his roll became more consistent. After practicing every day for two weeks Ted felt that he had mastered the roll technique. Ted still had a whole summer of kayaking ahead.

Mastering the roll gave Ted a feeling of confidence in his abilities. He went out on the river frequently, experimenting with more challenging situations, anxious to develop his skills further. Other kayakers were becoming concerned for the safety of Ted and his friends and suggested that they take a kayaking course.

> I know there are new paddlers this season that are extreme sports enthusiasts. They took up river running this year and they started off basically just learning themselves. They didn't take courses and didn't paddle with people that are experienced. They were basically learning on their own until somebody suggested that maybe they should take a course. We were just waiting for something bad to happen. Hopefully it won't be a serious experience. (Peter, p. 4)

This example again shows the kayakers' reluctance to question the risk decision of another kayaker. Some kayakers saw Ted and his friends as thrill seekers disregarding safety. Others saw them as inexperienced kayakers unaware of the risks. The other kayakers were hopeful a kayaking course would increase their awareness of the hazards and cause them to weigh their risk decisions more carefully. Ted and his friends heeded the advice of the more experienced kayakers and enrolled in a kayaking course.

Effects of the Kayaking Course

In the course Ted learned different stroke techniques and how to read the river and identify risk situations.

> It helped a lot actually. I never even knew how to catch an eddy or get out of an eddy before. Like you know when you want to leave an eddy, the water is coming this way and you do a sweep and you grab your paddle and the water will kinda pull along this way, right? But before I would go out there and it would want to flip me because I didn't know which way to lean. In the course he told us a lot of stuff, man. Yeah, we never even knew half the stuff that was going to happen. You know, sweepers and logs and

> undercuts and all kinds of stuff. Just kind of learned to stay away from those and know what you got to do, kind of thing. (Ted, p. 15)

Ted was unable to identify his mistakes from his trial and error method of learning. With instruction he came to learn the consequences of his actions. He learned the proper paddle strokes that were required to maneuver the kayak. He learned how to lean the kayak and how to use a slap brace to keep from flipping. After the course Ted was able to avoid many of the spills that occurred in his initial experiences. The course also helped Ted to develop an awareness of the potential hazards in the river environment. He realized he was putting himself at risk but this realization did not appear to cause him concern. "I kinda actually like risk, I was kinda like worried about it but nothing serious" (p. 15). At this stage of learning it appeared to be more good luck than good management that kept Ted from harm.

In the previous chapter one of the aphorisms taught in the course was shown to help Ted control his fear in these situations. Ted remembered that when you are stuck in a hole and the worst comes to the worst you can, "swim down low and catch the flow." "Leaning forward and kissing the deck" was another aphorism that taught Ted the safe method of exiting a kayak. The value of taking a course was supported by Ted's comment, "You need to take a course for sure" (p. 6).

The course was instrumental in the development of Ted's skill and knowledge. As Ted gained skill and knowledge he found new sources of learning in his ongoing quest for skill development.

Other Sources of Learning

When Ted was out paddling he continued to meet other kayakers who were willing to give him instruction. As before, the tips from these other kayakers proved helpful.

> It was weird 'cause what happened was they said, "Why don't you try to lean forward on the drops, hey." And so I'm like, "Okay, I'll try to lean forward." I started leaning forward in every hole. I punched through it and before I was just going, "OOPS!" and

> flipping over right. So first drop I leaned forward and "Holy Cow, this works!" and then I'm like, "Oh yeah! Right on." (Ted, p. 9)

This one pointer from a more experienced kayaker put Ted on the right track. He was now able to keep from flipping his kayak when going over drops. Ted stated that even if someone teaches you, the best practice is just doing it yourself. He therefore continued to paddle every day and cited this practice as another reason for his improvement.

> The reason we improved so fast 'cause every day we were paddling, every single day. You know what you're doing wrong; so the next day, "Okay, I can't do everything" so you do something different and it works. "Oh yeah, cool." And the next day you go out and you try again and you get better.---You have to keep going again and again, 'cause the next time you're probably going to forget what you did wrong and you're going to start doing it again. So it helps to practice a lot at first. (Ted, p. 21)

Another source of learning accessed by Ted had had both positive and negative elements.

> Oh yeah, I got some kayaking videos here and it makes me see. Actually I don't really watch the actual kayak. I watch the river, what lines they're taking. And I've learned a lot of river reading skills just by watching the video, pretty much. Just by seeing, you know, how the water's falling, the tongue and you're always boofing really hard, jumping off the top of waves and clearing holes. And actually I learned a lot off of the videos, to tell the truth. And knowing what I can do, like I've seen stuff where if I hadn't seen the video and seen somebody do that I would probably think, "Holy Cow! There is no possible way you can do that." But now I know you probably could. It could be dangerous in a sense watching these crazy videos but then I don't know. (Ted, p. 22)

The videos helped Ted to improve his skills in reading the river but as he suggested they have the potential to encourage people at Ted's level of experience to enter into risk situations beyond their abilities. For a person such as Ted who already pushes his limits this could have serious consequences. This demonstrates how learning occurs whether or not it is intended.

Ted says that some of the knowledge, the mental preparedness necessary for kayaking, was transferred from his participation in his other high risk sports, like backcountry skiing and rock climbing.

> Rock climbing is really, like you're used to being in those kinds of situations where you get accustomed to it. You're looking a thousand feet down and you're looking at the ground and you're just hanging from a little piece of gear in a rock. You feel a little more comfortable being in high-risk situations. You know how to handle the situation; you just gotta clear your mind, kind of thing. (Ted, p.33)

Ted cited his familiarity with high-risk situations and his willingness to engage in these situations as another reason for the rapid progression of his learning.

> It's really important to take risks, I feel. 'Cause I wouldn't be around right now, if I hadn't done something before and been scared shitless to do it and I've done it. And I've thought, "Holy Cow! I've done it! And that wasn't so bad." That's a big part of it. You gotta go out and try new things. You can't just expect to become a Class IV paddler. You gotta go out and try it. ---'Cause I know when I learned to roll, we went out and tried it in all the rivers we could. You know paddling in some pretty crazy stuff. Maybe the first few times we were probably pushing it but after we pushed it, the next time your paddle was good. (Ted, p. 30)

Ted was gaining skill and knowledge because he enjoyed the risk situations and was able to push his limits. He did, however, expose himself to the risk of serious injury. He was fortunate that neither he nor his friends experienced severe injuries in the process of learning though they were not entirely injury free.

> We were doing middle Williams one time and we were trying to roll upside down over a big boulder field and he was guarding his head like this and banged up his elbows and his face a bit. Another guy broke his nose once. And I got a boat on the elbow trying to run off a drop backwards and my buddy was just sitting there with his boat and banged my elbow pretty good. Other than that it was nothing serious at all. I don't think that we have had many bad injuries at all (Ted, p. 12).

Ted's statement indicated that he saw only the actual injury. He did not contemplate the possibility of more severe injuries arising from his activities. In this way he appeared to minimize the injuries and the amount of risk to which he was exposing himself. When Ted experienced these mishaps that he considered minor or when he witnessed the mishaps of others, he did acquire knowledge that in turn affected his behaviour.

> My buddy was paddling Kleanza Creek a few months ago and got pinned underneath a waterfall. He went off a waterfall and his boat got caught and some how this narrow wall of waterfalls was pounding like this and he couldn't get out. He got stuck in his boat and couldn't get out of his boat and Holy Cow! He was under the water for 20 seconds and he pulled his deck and his boat filled up with water and came rushing off the snag and he was a big strong guy and he couldn't get out of his boat. Maybe if you had a knife if you couldn't get out you could cut your legs out, you know. So that is why I bought a knife, just you know if snags or a rope gets caught on you, you could get yourself out. (Ted, p. 31)

Witnessing his buddy's misadventure increased Ted's awareness of potential hazards. This new awareness prompted Ted to augment his safety gear to prevent a similar situation from happening

in the future. Ted said that his awareness of rescue techniques also improved when a friend took a rescue course and shared the information with Ted.

Towards the end of his first kayaking summer Ted went with his friends on a kayaking holiday. He described this adventure as his "best travelling trip ever" (p.1). During this holiday Ted experienced his best as well as his worst kayaking adventure. He admitted, "It is really hard when you are out kayaking, you just want to do it all. It's hard to say no" (p. 28). Ted said that at times he was afraid for his life. He did not know what was coming up. He would be flipped over, exit his kayak and be caught in holes not be able to get air, thinking, "Holy Shit!" "I'd better get out of this thing" (p.13). These experiences put Ted in touch with his own mortality. They caused Ted to look at the risk situations differently.

> I have been a little more safety conscious. I kinda want to live a little longer now, 'cause actually kayaking has been a little more dangerous than I thought it was going to be apart from anything else. It kind of opened my eyes on the future more or less than just the now kind of thing. I don't want to crip' myself and not be able to paddle anymore or anything like that.----I find from doing high-risk sports, I became a lot more safety oriented because I know what can happen. I know you're not going to walk away if you don't. (Ted, p. 36)

Ted has taken an important step. He is now looking to the future instead of focussing on the thrill of the moment. He wants to be able to continue kayaking for many more years and realizes that he needs to choose his risk experiences carefully. Interestingly when Ted discussed how he would teach someone else to kayak, he says that safety would be his first concern.

> I'd make sure they know how to roll and I'd make sure they know river smartness. Not so much reading the river but know that if you're waist deep in water you don't stand up cause your foot could get caught and you could get pulled under and you'd drown 'cause you can't get back up. And I'd make sure they had a basic understanding of how to roll and be able to swim. Like you can't just swim into an eddy, you gotta do a body roll unto it and you have to know how to climb onto the back of your boat if you have to rescue. I'd make sure they know the basic hazards to watch out for before they start kayaking in serious water, you know. I think safety would have to come first before you learn the actual paddling skills. (Ted, p. 23)

Ted's concern for safety seems to have risen out of his new respect for the hazards of the sport and a change in his focus from the thrill of the moment to a desire to continue to have enjoyable kayaking experiences in the future. He said that it all comes back to judgement, that

you have to be comfortable with the risk you are taking and be confident that you can handle the situation.

Summary of Ted's Experience

In one kayaking season, a period of 5 – 6 months, Ted progressed from tentative experiences in the lake to challenging experiences in Class IV white water. At the end of the season Ted felt confident in his abilities to handle almost any situation. "I feel now that I can do it" (p. 27). "I can read a river pretty good now" (p. 17). Ted's learning was rapid but not always safe. In Ted's introduction to the sport and during his initial experiences, his learning was delayed because of his trial and error methods and his lack of confidence in his abilities to try new situations. During this time his inexperience and lack of proper equipment was shown to increase his level of risk. Instruction from other paddlers and a kayaking course resulted in an accelerated leap forward in his learning. Participation in the course helped Ted increase his river reading and paddling skills. Ted gained an awareness of the potential hazards in the river environment but awareness alone did not appear to alter his risk taking behaviour.

Experiencing more dangerous risk situations and fearing for his life did give Ted a new appreciation for the benefits of a successful experience. A successful experience was described earlier as one where the kayakers have confidence in their ability to run the river, where they feel challenged and most importantly where they have a favorable outcome. At the end of his first season Ted appears to have developed the skill, knowledge and experience to enable him to choose a successful kayaking experience. It appears that he now takes "smart risks." Ted's learning experience will be compared with the experiences of the other kayakers in the study.

The Other Kayakers' Experiences

The other kayakers in the study are also active individuals with a love of the outdoors. They hike, bike, canoe and backcountry ski. These kayakers were introduced to the sport in

different ways: some through a kayaking course, others with experienced friends. Some of the kayakers were like Ted, actively seeking a new experience while others say that they felt pressured into learning.

Introduction to the Sport

Jim's introduction to the sport occurred 20 years ago. He says that at this time it was difficult finding experienced people as companions. Kayaking, especially in the Pacific Northwest, was a relatively new sport. Jim took a one-day course in a pool where he was shown how to roll and then he and his inexperienced friends went out on the river to learn on their own.

Betty and Alice were introduced to kayaking through a kayaking course. Alice had some previous experience canoeing but Betty had never seen a kayak and was totally unaware of the risks involved in the sport.

> Betty: I never even knew what white water kayaking was. I'd never seen pictures or displays or videos of it. If I had I probably wouldn't do it. But I said, "Yeah, kayaking, I'd like to do that."---So we all decided to take it together and so I guess that's kinda how I got into it and I'm still really nervous when I go to the river and just like skiing or biking or any sport like that, I'm always extra cautious." (p. 20)

These women appear to be seeking a new learning experience, a new outdoor sport, rather than the thrill of a risk experience.

Friends who are experienced kayakers introduced Peter and Mary to the sport. Peter and Mary's first experience in a kayak occurs on the river. Peter says, "The first time I was in a kayak, I ran a river. I put my faith and trust in the people who were taking me down" (p. 5). Mary actually went out expecting to be canoeing.

> I was supposed to go canoeing and I showed up at the river, where I was supposed to be, with all my dry clothes. Bill had someone else to go in his canoe, so he gave me a kayak and I went down the river and I liked it a lot. (p. 5)

The above kayakers voluntarily choose to engage in a new experience. They show excitement at the prospect of learning a new sport, experiencing the wilderness environment in a new way. Jane, on the other hand, admits to feeling pressured into learning this new sport.

> We both [she and her husband] like canoeing right, so I love the water and so we both thought that we would really like kayaking. ----So he bought a kayak and went for it and started learning rolls and he bought me all the kayak stuff. And there was quite a bit of pressure there. (p. 2)

The kayaking equipment is expensive. Jane now feels that she has to like the sport to justify the expense. Right from the beginning Jane confesses to a "major fear about that spray deck" (p. 1). This feeling of fear and her perceived lack of freedom in her choice of activity have a significant effect on her process of learning. The kayakers' introduction to the sport, with experienced friends, with inexperienced friends or with a course, affects the progression of their learning. This will be evident in the discussion of their initial learning experiences.

Initial Learning Experiences

The importance of learning a "bomb proof" roll has been discussed. This section begins by describing the other kayakers' experiences before they develop the ability to roll anywhere in any situation. This is the time when they are considered a liability to the more experienced kayakers. When out with other less experienced kayakers, this is the time when they are most at risk.

Jim's initial learning experience was similar to Ted's. He has some basic instruction on the roll technique and then, as with Ted, it was a process of trial and error. For Jim, there were few experienced kayakers in the area to provide instruction and the kayaks were not as maneuverable as they are now. It therefore takes Jim longer to master the roll technique. Mary and Peter are fortunate to have experienced friends who are willing to provide instruction. Mary has some initial instruction in the roll technique and then she "practices like crazy" (p. 5). She says that you just remember what they say, "Head down and hip flick" (p. 5). In three weeks she masters the roll. After Peter's initial trip down the river, his friends take him to the lake and provide instruction on the roll technique. He too practices on his own and masters the technique in a short time. With initial instruction Mary and Peter learn the correct technique rather than

learning faulty techniques which would delay their learning and which could increase their risk of injury.

Betty and Alice fail to master the roll technique in their first kayaking course. They go out a few times in the season but are reluctant to experiment with the water because they lack the ability to roll and because their tolerance for risk is lower than that of the male kayakers. They are a liability to the group at this stage of learning. Betty does not have her own equipment, which limits the number of times she is able to get out on the river. The following season they both take the kayaking course again. They practice in the pool, the lake and the river. Their roll becomes stronger during their second season kayaking giving them the confidence to try some of the fun spots. The experiences of Alice and Betty demonstrate, when instruction is not followed by frequent practice, that leaning progresses slowly.

Jane starts with a kayaking course and continues to practice weekly all winter in the pool. She becomes confident in her ability to roll in the pool and in the spring she moves onto the lake to practice. She claims, "it was totally different between the pool and the lake because I hate freezing water" (p. 3). She describes a learning experience in the lake where George tries to teach her to roll.

> It was probably Lake Kathlyn and George wasn't in a boat and I was in a boat and we were just practicing rolling. It was really shallow and I almost hit my head on the ground when I went over and he would stand there and I would open my eyes and I could see him standing there. He would guide my paddle through it and that was okay. (p. 3)

Having George nearby to assist her with her roll helps to allay Jane's anxiety but she says, "it was taking me a lot longer to catch on and he was pretty patient teaching me to roll but he was getting frustrated." (p.3)

George finds other kayaking companions, who like himself are progressing at a faster rate. Jane lacks the confidence to go out with George and his new companions, as she does not have a solid roll. She says that she was always apprehensive about the spray deck. In the pool where it was warm and she could see well, she felt confident but when she went in the lake where

she couldn't see as well and the water was cold, she felt "totally uncomfortable" (p. 4). Jane's progression of learning is slow and is not enjoyable. Her progress is impeded by her fear and by the fact that she feels pressured into learning a sport that terrifies her. She appears frustrated by her inability to keep up with her husband in this sport. This suggests that spouses may not always be the ideal instructors.

There are several factors identified that account for a positive learning experience. Initial instruction seems crucial for the kayakers to develop the correct technique; however, instruction alone does not ensure that the novice will learn quickly. Instruction must be followed by frequent practice in which the kayakers have successful experiences. The kayakers appear to progress more quickly when they have a keen desire to learn and are willing to take risks. When the kayakers progress at the same rate as others who are learning, the experience appears to be more enjoyable. A description of the kayaking course provides further insight into the kayakers' process of learning.

The Kayaking Course

The course that Alice and Betty take is similar to the one in which Ted participated. I also took this course as a participant observer. What follows is a description of the teaching methods used and the effect of these methods on the kayakers' process of learning.

The first day. The kayaking course starts out in a small lake. The would-be kayakers are given what the instructor calls the "safety spiel."

> Bill says that kayaking is a high-risk sport. He says that we should not be coerced into doing it by anyone. It is a sport one should choose to take up of their own free will but they should be aware of the risks involved. He says that he will do all he can to ensure our safety by teaching us what to do and keeping an eye on us but there are sometimes things that can happen, so be aware and know what you are getting into. He says that the course will progress at the level of the slowest member. No one is pushed to go father than the level at which they are comfortable. (KCD1, p. 1)

This statement introduces the kayakers to one of the rules of social conduct. Kayakers should not coerce others into uncomfortable situations nor should they let others pressure them into these situations.

During the first evening of the course the learners are taught how to do a wet exit. They are then shown the basic paddle strokes and when to use them. There is much practice and correction of technique. A booklet describing common river obstacles, the implications of these obstacles, rescuing techniques, universal river signals, and a glossary of river terms is given to the learners at the end of the session. The instructor tells the learners that they must read the booklet prior to the next session.

Prior to leaving for the pool for the second session, I read the booklet. The booklet mentions all the things that can go wrong when out kayaking.

> I thought the booklet would be on the paddle strokes and how to kayak. The entire booklet was on rescue techniques and how to get out of trouble. It made me realize even more that this is a high-risk sport. (KCD2, p.1)

The second and third day. In the pool the learners are shown the Eskimo rescue, how to roll with the assistance of another kayaker and how to roll unassisted. This is a safe environment for experimenting with the various techniques. The third evening, the learners go into a little creek to practice the different strokes that were taught on the first night of the course. The learners are shown how to use these paddle strokes to eddy into and out of the current. Once the learners become comfortable with their meager skills and kayaks they enter the main river and practice ferrying across the river using the current. The instructor is constantly correcting the learner's strokes, praising when something is done well and correcting the learners when something is not done right. Whenever someone flips over, the instructor explains why this occurred. The instructor identifies clues, which enable the learners to read the river and to know which places to avoid.

> He [the instructor] talks about being forced against immovable objects in the river and not being able to get off. He indicates that the bridge is one of these objects. He says that if we get pinned against the bridge we have to keep leaning downstream and try and

> pull ourselves around the object and try and break free. He says that if we lean upstream we will flip and then become pinned against the object. He says that if that happens he will have trouble rescuing us. We are at all times to keep an eye on him and follow his course down river. He makes us go over the hand/ paddle signals and how to do a wet exit and how to swim in the river if we got dumped. (KCD3, p. 7)

The instructor is teaching the environmental assessment skills, which are described in an earlier chapter. He is also teaching the need for careful ongoing assessment of the river and the need to plan for the worst case scenario. If something were to happen, the learners say that they are confident that they know enough to survive. Creating awareness of the possible hazards serves to keep the kayakers focussed on the tasks at hand.

> All the learners had a look of intense concentration on their faces. Everyone was hanging on the instructor's every word. I commented on the look on everyone's faces. The instructor said that it would cost extra if you wanted laughs. Kayaking at this point is serious business. (KCD3, p. 7)

The fourth and fifth day. These days are full day trips down the river. Equipment is checked prior to departure. Life jackets and helmets are checked to see that they are snug and that no straps are dangling. The universal river signals described in the booklet are reinforced. Stretching exercises are done. Once in the kayaks everyone is asked to check that the grab loops on their spray deck are out. Again the learners are asked what they would do if they flipped over and how they would swim in the river, if they had to do a wet exit.

The ritual of checking the equipment, going over the river signals, and verbalizing a plan of action should they flip, is done in the same manner every time the group goes out. The instructor is helping the learners to develop safe habits. He anticipates that by repeating the litany again and again, the verbal responses will become automatic actions for the learners. The instructor is very patient with the learners, praising when something is done right but very quick to point out when something is done wrong. When mistakes are made, the instructor always asks the learners to tell him what they should have done instead. Drawing attention to their actions encourages the learners to reflect on the consequences of these actions.

The instructor takes every opportunity to identify hazards and to teach the learners the importance of ongoing assessment.

> He showed us how to back ferry so you could read the river and decide which route to take. He said that if you could not see in front of you that you should take your kayak out of the water and walk to where you had a better view. He showed us logjams and talked about strainers and about being pinned and getting caught on sweepers. He would point out these hazards when he was talking about them. He showed us boils and whirlpools. Just when I would start to feel more comfortable he would mention another hazard. (KCD4, p. 10)

As shown earlier, the awareness of the risk involved keeps the learners focussed. In this example the instructor is also demonstrating one of the important safety rules of conduct: don't paddle beyond what you can see.

The group puts ashore for lunch on the beach. Now that they do not have to concentrate on paddling their kayaks, the learners become aware of the beauty of the environment.

> The river valley is beautiful. You can smell the trees and the water. Fresh deer and moose tracks are evident in the sand. Behind the sandbar there is a large clearing almost covered by a canopy of trees. On a wet day you could probably sit under this canopy and never get wet. There is no underbrush, only a carpet of needles. The sun is filtering through the trees. Truly an idyllic spot and one that is only accessible by boat. (KCD3, p11)

Even the learners with a low risk tolerance enjoy the beauty of the environment. The beauty alone can lure them back to the river. The instructor discusses environmental issues and the importance of preserving these areas. He is very careful about picking up all his garbage and belongings. He sets the standard for the group and so the learners do likewise.

In the following example the instructor demonstrates the social rule of conduct that says, "if kayakers go out as a group they stay as a group". Kayakers must be concerned for the safety of all members of the group.

> Alice and Betty collide in their kayaks and Alice flips over. Betty is unable to help her up with an Eskimo rescue so Alice does a wet exit. The river is quite fast at this point. The instructor tells the rest of the learners to stay in the eddy while he goes to rescue Alice. I am unable to stay in the eddy, the current pulls me out and I am off down the river. I try desperately to stay in the next eddy and manage to succeed. The instructor firmly points out that he had told me to stay in the eddy. We must all stay together. A little further down, I again fail to eddy out with the rest of the group. I am floating off down the river on my own. This is a scary feeling. Who would rescue me if I flipped? I

> paddle very hard, trying to ferry into another eddy. The instructor immediately tells the group to follow me. It makes me realize how the actions of one person can impact on the whole group. The instructor had wanted the group to practice eddying in and peeling out of the current. Because I couldn't make it into the eddy, the entire group has to move on. (KCD4, p. 11)

As a less experienced kayaker, I am a liability to the group. If I had been out with other kayakers wanting to enjoy a play spot, my actions would have affected their experience. At this point I am not able to keep myself out of risk situations and must rely on the experienced instructor to keep me safe. This shows the importance, especially for beginner kayakers, of choosing kayaking companions carefully and of making sure they are willing to accept responsibility for your safety.

A few times during the course the group encounters fishermen also enjoying the river. The instructor imparts another kayaking rule of conduct. The learners are advised to be quiet and stay away from the fishing lines. The instructor demonstrates respect for others who enjoy the river environment.

One of the other learners, a young male, appears to have a high tolerance for risk and an eagerness to learn. He flips more often than the rest of the group but his skills are developing more quickly. The instructor says, "experience is the best teacher. Those that spill, learn faster. You learn by making mistakes" (KCD1, p. 2). I, on the other hand, have a very low tolerance for risk. I am not willing to risk flipping over just to improve my skills. My learning progresses slowly. I do, however, learn to control my actions when I do flip over.

> We continued around a bend in the river, the current is fast and goes against a rock wall. I get a stuck against the wall. I lean downstream for a few minutes as instructed trying to get away. For one second, I try to steady the kayak and lean upstream. Over I go. I very calmly, lean forward, find my grab loop and pull the skirt off. I push my butt out and come to the surface. Just the way I had told the instructor I would do every day. I feel so pleased with myself. I do not feel panicky at all. (KCD5, p15)

The constant repetition of what to do when you flip over did become an automatic response. I knew what I had to do and I did it. Knowing what to do enabled me to control my fear. There was a tremendous feeling of accomplishment on being able to do this procedure in the river environment. My level of confidence increased dramatically.

The last day of the course, the instructor teaches rescue techniques. I had a turn at being the swimmer waiting for rescue.

> I flipped and exited my kayak, grabbed my paddle and headed downstream on my back, feet first. When I came near the rope throwers, they hurled a grab rope at me. Their throws were short and the rope does not reach me. I thought about swimming for it on my stomach but it had been so drilled into us to swim on our backs, feet first, that I just kept going. The experienced paddler paddled up to me and towed me to shore. I waited like the instructor said, until the water was very shallow before I stood up. He had said not to stand up in water more than knee deep as your foot could get caught in the rocks and you could fall over and drown. I was having trouble walking in the river current. The experienced kayaker suggested I walk downstream. He said that it would be a lot easier. There sure is a lot to learn. (KCD5, p. 17)

One practice session is not enough to teach proper rescue techniques. It does give the learners an awareness of the difficulty in performing a rescue, getting the throw rope in just the right place for the swimmer to grab. It shows the learners the necessity of paddling with those who have experience in rescuing other kayakers. While swimming in the river, the kayakers are able to feel the power of the current. This experience helps them learn respect for that power.

This comprehensive course values and communicates strategies that enable the kayakers to experience the benefits of a risk experience without experiencing the losses. Alice and Betty learn about the hazards in the river environment. The course teaches them the correct techniques for paddling, rolling and wet exiting the kayak. There is a gradual progression from the safe environment of the lake and pool, to a small stream and then into the actual river environment. The instructor points out the correct techniques rather than leaving Alice and Betty to try to identify the correct method in a trial and error manner. Participation in a course provides the opportunity for Alice and Betty to learn the social rules of conduct. Knowing and practicing these rules of conduct makes the kayakers more acceptable kayaking companions.

Prior to participating in a kayaking course, Mary had been paddling for 2 1/2 years. She supports the benefits of instruction when she describes the learning that takes place after she participates in a kayaking course.

> We did some flat water stuff, working on strokes and then we did some stuff playing on waves and that was interesting 'cause I'd never really been able to figure out how to do it, so having some instruction helped. (Mary, p. 15)

Betty shows her support for the teaching methods used in this course when she describes how she would teach someone to kayak.

> I guess making sure it was a gradual progression. Starting out on flat water. Just showing the strokes and that sort of thing. Strokes that you'd need to know once you got on the river. Starting with a low level of current and building your way up to more technical or difficult situations. I guess this is just coming from the way I learned because I feel that was a successful experience. (Betty, p. 11)

This method of teaching enables the learners to develop confidence in their abilities while remaining within their comfort zone. In this course no one was pressured into an uncomfortable learning experience. Jane is not so fortunate.

Jane's Experience

Not all courses are positive learning experiences. Jane participates in a course where she feels pressured into learning. The people in the course are all males, willing to take a few risks and progressing at a faster rate. The instructor is a male who believes that learners must take risks in order to learn. Jane says, "We could have walked but there was real pressure from the instructor just to do it, otherwise you're not going to learn. I would have gladly walked around it, but I felt I had to do it" (p. 6).

This is not a comfortable learning experience for Jane. She is feeling intimidated by the other kayakers. This type of learning environment does not foster the value of a successful experience for all members of the group. This course pushes the slowest person to keep up with those progressing at a faster rate, rather than respecting the individual's tolerance for risk.

The other kayakers like Ted are always seeking to improve their skills. As they progress they access additional sources of learning.

Additional Sources of Learning

The kayakers appear like sponges, soaking up kayaking knowledge wherever they can. They value the acquisition of skills. They learn from other kayakers, from practicing and trying new activities. Some of the kayakers learn from videos and reading books. They learn different skills from the different sources. These will be discussed.

Tips from other kayakers.. When describing the social environment of white water kayakers, I mentioned that the kayakers are reluctant to give advice to someone engaged in what might appear to be a risky situation. They respect the decisions of the other kayakers. On closer reflection I notice that when the kayaker asks for advice or appears eager to learn, the more experienced kayakers are willing to pass on any tips they may possess. The kayakers in this study support this view.

Mary: I learned from all the guys who were on the river and they had no problem like telling me how to do stuff. (p. 15)

Betty: There have been other people, like intermediate paddlers in Terrace, who offer tips and advice and things like that, when you're going down a specific river. They've been helpful. (p. 10)

Jim: I just picked their brains and went with them a lot and I just learned from them. (p. 10)

The other kayakers do not always have to offer instruction to aid the beginner's learning. Simply observing other kayakers' actions appears to be an effective method of learning. "When a group of us beginners went out, you definitely learn different things from the others' mistakes and you also learn from watching what they do well" (Betty, p10). The "different things" that the beginner kayakers learn from other kayakers include river reading skills, rolling and paddling techniques and equipment knowledge.

River reading is one of the skills that appears to be best learned from paddling with experienced paddlers. At times the kayakers learn by observing the route the more experienced kayakers take on the river. "I would watch the lines where they had trouble" (Peter, p. 4). At other times the more experienced kayakers point out the hazards. "Mark introduced me to a

couple of new rivers and he showed us a couple of nice little pointers and what an actual hole looks like and what to avoid" (Ted, p. 17). Kayakers with a lower tolerance for risk appear to learn from a combination of the above methods combined with discussion about the hazards.

> The first time is usually following someone down the river that knows where they are going. I think it's just after that, you sort of develop skills about knowing what to look for. At first you're told like, "Do you see that rock?" And, "Do you see this?' And, "Do you see that?" Then after it's like, "Okay, what do you have to look for down there? Then the next step is, okay, you just take your own line and go down through this and when you get through that, you'll know whether you've taken the right line or not. (Betty, p. 9)

This appears to be a very effective method for teaching the beginner kayaker how to read the river. Initially the hazards are pointed out to the beginners. Next the beginners have to identify the hazards on their own. Once the kayakers are able to recognize the hazards they are able to pick their own route down the river. For those with a lower tolerance for risk, following close behind an experienced kayaker helps to allay fears.

> You talk to the guys and I talk to Jim and Bill and they both totally know how to do things. And so I was like, "Okay, I'm just going to go out in the middle and then paddle like hell over to the other side." And he's like, "Yeah." Then I think I asked Bill if I could follow him a little bit 'cause it just sometimes makes it easier. Even a hundred feet behind them, no not that far, fifty feet behind them, so you can see what line they are taking and yeah, it worked out fine. (Mary, p. 4)

Discussing the route with the more experienced kayakers is a method whereby beginners can verify their decisions. Following close behind the more experienced kayaker allows the beginner to observe the route and the techniques that are used to maneuver the kayak. Jim advises it is important that the experienced paddler is aware the beginners will be following their line. "If you are not aware, then you may be surprised to find someone following you into places where they shouldn't be – the lemming effect" (p. 4).

Peter demonstrates how he is "learning to do my own game" by paddling with experienced kayakers.

> They're very level-headed and they're very cautious. If we had ran the river even a week before and there was an increase in water level, we'd always get out and scout difficult sections. So now I'm not just, you know, go and do it just because somebody else did it. It's how I'm feeling and how the day's going and whether I run stuff or not that's okay. I

> just decide on my comfort level and one day I might feel comfortable in doing it and another day I just say no. It's just not there. (p. 14)

The other kayakers are teaching Peter several rules of conduct. Don't paddle beyond what you can see; listen to your feelings; be comfortable saying no.

Learning about the specific technical skills like paddle strokes and rolling is enhanced with tips given by other kayakers. This is especially helpful for Mary when the other kayaker is a woman.

> I actually learned a lot about paddle strokes from a woman from Stewart. A lot of people when they have really strong upper bodies can get away with sloppy strokes 'cause they have the power to move themselves around in the river. When you don't have a lot of muscle strength, you have to be a little bit strategic in how you do it. (Mary, p. 15)

Mary's comment suggests that women may find leaning the specific paddling strokes easier when instruction is offered by someone of the same sex.

In Jane's case the other kayaker is her husband. She describes a situation where he is trying to teach her to control her fear and learn to roll.

> I was practicing on the lake with George and he made me go under and hold my breath as long as I could before I got out of the boat. I mean he couldn't force you to stay under there but he made me count to ten or something before he would help you because you have to relax. Like I know watching the more experienced kayakers, they are better because they don't panic in the rapids if they get flipped. They'll wait and instead of spending all their energy trying to flip in the middle of a huge wave, they'll ride it out 'till its gone and then they'll roll up without much effort. (Jane, p. 6)

Because of Jane's low tolerance for risk when in a kayak, this method does not appear to be a positive learning experience. The pressure Jane is feeling to learn the sport appears to be increased when her husband is the instructor. In the previous chapter we saw that the kayakers were able to control their fear when they had confidence in their abilities to control their actions. Jane expresses a great fear of the spray deck. At this point in her learning she has to rely entirely on George for rescue. She is not in control of her own actions. This was shown to be a feeling that the kayakers dread.

Experiential Learning. Experience appears to be an effective teacher for all kayakers. Much of their learning comes from going out on the river paddling. Gradual progression appears to be a key factor for a positive learning experience.

> I got my comfort level up so I could do the Kitimat and then stepped up to the Wedeene and then up to the Clore and the Bulkley Canyon was kind of like the next step after that. So it was just a gradual progression." (Betty, p. 8)

When the kayakers experience a mishap their awareness of risk increases dramatically.

> Yeah, that was a good thing for me, just that constant reminder. Because I think that if I continued to have positive experiences and not have anything that scared me, then I would continue to push the risk until something possibly more serious happened. (Peter, p. 9)

Following a mishap the kayakers become more selective in choosing their kayaking experiences. The experience appears to motivate the kayakers to take actions that reduce the level of risk and prevent injuries. Peter discusses the mishap that increases his risk awareness.

> In that situation, there was another fellow that was probably a little more experienced than I was. Because I had no trouble before, I just hopped in the boat and without really seeing the perfect line that I probably should have done and maybe if I'd had a little more respect, I might have let him run it first. He had a lot more skill in rolling and reading the water. I just jumped out in front of him. I just thought I was totally prepared for this. And so it brought me a complete step back and I just realize that at any given time you could really have a bad experience unless you're totally concentrating and not taking anything for granted on the river. 'Cause that's when it usually gets you. So I'm a lot more cautious now. I know what the risks are and I guess when I'm not comfortable, I'll walk around it. (Peter, p. 9)

Prior to the mishap Peter experiences successful kayaking situations. These successes increase his confidence in his abilities to handle any situation. At this point in his learning he lacks the experience that would have enabled him to assess the situation more accurately. Experiencing the mishap teaches Peter the value of careful assessment of the situation. It also teaches him the importance of matching his skill level with the situation. Peter becomes a more cautious kayaker following this mishap.

Mary describes how experience affects the progression of her learning.

> Just like after that experience and getting out of my kayak and not trying more rolls and just getting to the point when you have to exit your boat. That was just scary, being crashed up against the wall. I just kind of panicked for a minute and got out of my boat.

> When now that I know what can happen in high water when you get out of your boat, I would make every effort to stay in my boat. Now I am smarter. That one experience is definitely going to affect other ones. There was somewhere I was paddling after that and it was big water and it was a bit different but it was still like big and hard and I rolled in a really awkward spot. But I made myself come up and I rolled again not 20 meters downstream and I was like, "I'm not swimming in this canyon, Forget that!" That was bad last time so that really motivated me to think about this one and go, 'EERUMPH!" (Mary, p. 12)

Mary initially believed that exiting her kayak and swimming would get her out of a difficult situation. After experiencing the mishap she realizes that swimming is not always the best option. The next time she is in a similar situation her new awareness prompts her to try harder to stay in her kayak and roll up.

Experience teaches the kayakers about the proper equipment. After her mishap Mary realizes the need for good equipment. She does not want to experience that type of mishap again.

> I bought a new life jacket. Hopefully it will give me more flotation 'cause I was like using an old one. So I got rid of that one and got one with more floatation. The same thing happened to a guy who had a similar experience. He did almost the same thing I did and got sucked down and couldn't breathe and was just totally overwhelmed by it. And he bought a new life jacket the next day 'cause like he had a pretty low volume life jacket. So he bought the one that is a big puffy one from the Co – Op. Like this is not going to happen again. (Mary, p. 3)

Jim says " I've had enough experiences where I know that at any time I may be in the water. So I wear the appropriate clothing" (p. 16). He says that when he first started paddling he and his companions would discuss their equipment, checking that amongst the group there is enough equipment to do a rescue. As he gained experience he says that he became confident in his ability to know the required equipment and to remember to bring it along. He trusts that his experienced companions will do the same.

> When I was first learning, we talked about it much more than we do now. We would almost go through a checklist, "So do you have your throw line? Do you have your safety line? I've got the first aid, do you have any?" Now you just take what you take and assume that everyone else is going to be also. (p. 16)

Unfortunately this assumption is not always correct. Jim recounts an outing where no one had the required equipment.

> We couldn't believe it. There were three or four very experienced paddlers on the trip and not one of us had our first aid kit because we all had our first aid kits at home getting ready for an extended trip we were about to leave on. So we had no first aid kit. We just made do with what we had. You rip up a T-shirt and you try and patch it up until you get out. (p. 21)

This mistake shows the need for constant surveillance. Experienced kayakers who have learned injury prevention strategies can be negligent when they become complacent.

Books and videos. Some of the kayakers in their quest for skill and knowledge access books and videos as a source of learning. Initially they read books and magazines that describe paddling and rolling techniques and river rescue. The kayakers share the books that they find useful, especially those on river rescue. As Alice says: "You read and become more knowledgeable about what [equipment] you need" (Alice, p. 10)

Mary does not find reading about rescues helpful.

> I know Jason read the whole thing front to back. I wouldn't even read it. I didn't want to know of all those people dying and how they died. That's all I need to be thinking of going down a river. That's great! Just think I could be just like that person who got hung up on a log by a life jacket. (Mary, p. 11)

Mary is a cautious kayaker. She has a low tolerance for risk. She is able to control her fear because she has confidence in her ability to handle the experiences she chooses. She feels that if she reads about the mishaps of other kayakers that she will not be able to control her fear. In previous chapters it was shown that Mary paddles with experienced kayakers. She relies on their expertise for rescue.

Jim's comments show that as the kayakers gain experience the focus of their reading changes.

> I don't buy paddling magazines any more. I used to and then I started to realize a bunch of what they were putting in their paper was just trying to sell me stuff and I already had the stuff. I read a much different type now. I read more about trips now, about wilderness trips, because that's where my focus is. (p. 19)

The kayakers appear to be continually seeking new experiences as well as seeking the skills, knowledge and equipment to make their experiences a success. When Jim's focus changes from the "rockum sockum" white water to longer trips on remote rivers he seeks to learn about the

different locations, where to go hiking in the areas. He is also interested in learning about outdoor cooking and camping skills.

Some of the kayakers find that watching videos helps them develop specific skills. Initially they watch the videos to help them visualize the roll technique. As they become more confident in their abilities to get down the river, they want to learn other skills such as surfing the waves.

> Yeah, he has a lot of really good videos that I watch. 'Cause now I'm not just into going down the river, it's like I want to start playing on the stuff and that's a different technique and it takes a bit of time to figure stuff out. So now I've started watching these videos that show you how to do it. (Mary, p. 16)

Watching the videos allows Mary to study the kayakers' actions. This is difficult on the river where the action happens so quickly and the observer is unable to get close to the kayaker.

Learning from other sports. The other kayakers, like Ted, acknowledge that some of the skills that they learned to handle the risks in other sports are applicable to white water kayaking as well.

> I ended up taking a cross-country skiing course and it was a Level I Instructor Course. I didn't want the instruction and I don't even cross-country ski that well. That's not why I took it. It was all the safety aspect. You learned to use a compass. You learned to dig igloos. I mean I didn't need an igloo in the summer but you learned to start a fire with wet wood. You learned all these outdoor survival skills that I felt even though it was summer and we were boating, I could use them the same way. (Alice, p. 13)

Outdoor survival courses teach individuals how to prepare for the "worst case scenario." Each sport has its own particular hazards but the basic skills of risk awareness appear to be easily transferred from one sport to another. Peter says that for him it is the mental preparedness that is transferred from one sport to another.

> I've carried the same kind of mental preparedness that I have for, you know, a serious incident in back country skiing. I just carried it to kayaking. They are totally different skills I guess but the mental preparedness would be the same. Looking at the worst case scenario. "Are you prepared to deal with it?" "What if something happens?" "What are you going to do?" "What are your options?" (Peter, p. 21)

Jim says that once you have the ability to assess a risk situation you can transfer some of that knowledge over into a new situation. He also says that the ability to stand back from a situation

and realize there's nothing wrong if you don't feel like taking the risk is transferable. "If you don't feel like skiing down there, don't ski down there. If you don't feel like paddling down there, don't paddle down (p. 28). Jim's comment implies that it is acceptable to say no to a risk situation. It may be that some of the rules of social conduct that support the practice of risk handling behaviours in white water kayaking are transferable to other high risk sports.

Summary

A wide range of different research traditions relating to education share the position that knowledge is not transmitted directly from one knower to another, but is actively built up by the learner (Driver, et al., 1994, p. 5). In this chapter we followed Ted's journey into the sport of kayaking and compared his experience with that of the other kayakers. In this way we saw how the kayakers actively built up their skills and knowledge and learned to practice risk-handling behaviours. Individual and situational factors that affected the kayakers' learning were identified.

Most of the kayakers were actively seeking a new learning experience. The one kayaker who felt pressured into learning did not progress at the same rate and indeed was much slower in learning the skills. Initial instruction in paddling, rolling, and river-reading created an awareness of the inherent risks of the sport and showed the kayakers how to handle these risks. When the kayakers lacked instruction and instead employed a trial and error method of learning, they unknowingly exposed themselves to the risk of injury. Lacking initial instruction, they were unable to identify the risks involved and were therefore also unaware of the specific strategies required to reduce the risk of injury in the river environment.

Instruction alone did not impart knowledge to the less experienced kayaker. The kayakers were shown to require constant practice to develop the risk-handling behaviours. The kayakers who lacked the equipment, time or motivation to practice frequently, even though they had received initial instruction, failed to develop their skills, while the kayakers who went out frequently to practice quickly mastered the technical skills. Helpful hints from experienced

kayakers augmented their learning. Actually experiencing a mishap where the kayakers felt their lives were in danger caused a quantum leap in risk awareness. This new awareness of the risks involved appeared to be the factor that most influenced the behaviour of the kayakers. All who had experienced such a situation altered their behaviour. They bought better equipment, they developed their skills and they evaluated the risk situations more carefully following the experience.

The kayakers' skill, knowledge and understanding of the river environment were built up by paddling with experienced kayakers. Through discussion, differing perspectives were provided. The less experienced kayakers were able to reflect on these differing perspectives and thus make the ideas and practices personally meaningful. The experienced kayakers were seen to value and support the practice of risk-handling behaviours and thus were an excellent source of learning for the less experienced kayakers.

Watching videos and reading books reinforced the practical learning. There were pros and cons to the use of videos as learning tools. They were shown to help in the development of technical skills and also as Ted indicated, with the development of river-reading skills. The greatest potential difficulty for videos was their potential for promoting high-risk behaviour. The less experienced kayakers were previously seen to lack the ability to accurately assess their skill level and may perceive themselves as having the skills to attempt some of the high-risk activities witnessed on the video.

All the kayakers had participated in other high-risk sports. They indicated that much of their risk-handling knowledge had been gained in previous survival courses and by participation in other high-risk activities.

Social interactions were seen to affect the learning process. When the less experienced kayakers were supported and encouraged by the more experienced kayakers, they had the confidence to try new activities. When they were confident in their abilities they were more likely to succeed. Successful attempts resulted in further gains in confidence and skill

development. On the other hand when the kayakers were coerced into trying new activities they were less likely to master the new activity. Failure to master the activity lowered the kayakers' confidence and reduced their tolerance for risk.

The kayakers' learning journey is seen to be a multidimensional experience that included objective and subjective components. The kayakers developed knowledge and specific skills but it was not until they had experienced hazardous situations that the knowledge became personally meaningful and changed behaviour. A summary of the findings and the implications of this study are discussed in the following chapter.

CHAPTER 7

Summary and Conclusions

Introduction

This study explored the risk-handling behaviour of white water kayakers. Interviews with seven white water kayakers of different ages and sex and at different stages of skill development were conducted over a period of three months. These interviews were transcribed and the transcriptions analyzed. The interviews revealed that the kayakers, rather than merely selecting among options that happened to present themselves, more aggressively tried to formulate options that reduced the risks of kayaking without sacrificing its benefits. Formulating options was shown to involve a complex, dynamic process of decision-making. This process of decision-making was the major theme developed in this study. In this chapter I review the individual and situational factors that affected the kayakers' risk decision-making, and their learning and practice of risk-handling behaviours. In doing so, I draw out the implications for Community Health Care and Adventure Recreation Programs and provide suggestions for future research. The limitations of this study are also addressed.

The original aim of the research was to increase the understanding of the risk-handling behaviour of white water kayakers. Yates (1992) claims that risk handling, because it has been recognized for such a short time, must be considered a high-priority research topic over the next several years. Risk-taking behaviour is a central concern to me in my role as a community health nurse involved in health promotion and disease/injury prevention. A misunderstanding of how people deal with risk can misdirect educational efforts (Yates, 1992). It is my expectation that increased understanding of the risk-handling behaviour of this group may lead to the development of more effective risk-handling strategies for other populations engaging in high-risk behaviours. White water kayakers were chosen for this study as they were purported to handle the risks of the sport effectively and as a result were purported to experience few serious injuries.

In Chapter 3, I described the approach used in the study. I chose a qualitative ethnographic approach using participant observation and in-depth interviews. The interviews were guided by broad, open-ended questions that allowed for the emergence of the kayakers' stories of their kayaking experiences. By participating in a white water kayaking course myself, I was able to gain entry into the social and cultural environment of white water kayaking. Participation in the course provided additional insights into the process by which the kayakers learned the risk handling behaviours.

The kayakers actively chose the white water kayaking experience because of expected benefits. Some of them were seeking the challenge of testing their skills, while others were seeking the peace and beauty of the wilderness environment. In either case they voluntarily made the choice to engage in an activity considered by many to be an activity that has a high risk of injury. To achieve a successful experience, where the kayakers felt challenged but did not sustain an injury, they needed to engage in many risk-handling behaviours. The kayakers put on protective equipment. They learned how to paddle and roll their kayaks and how to provide rescue and they acquired knowledge of the river environment and an awareness of both the strength and limitations of their kayaking abilities. These risk-handling behaviours were implemented following a complex, dynamic process of risk decision-making.

Risk Decision-Making

The search of the literature examined several of the predominant theories and models that have been developed to explain why individuals engage in risk activities and why they engage in actions that reduce their risk of disease or injury (Janz & Becker, 1984; Bandura, 1986; Weinstein, 1987; Yates, 1992; Wilde, 1994). These theories, while useful in helping to predict behaviour, fail to capture the dynamic nature of the decision-making that takes place in the sport of white water kayaking. There are two processes of risk decision-making identified in the study. One is a process of careful deliberation, while the other process is non-deliberative.

Deliberative Risk Decision-Making

For most of the kayakers in the study, the decision of whether or not to kayak was merely the first in a series of complex decisions. Once they made the decision to kayak and decided on whom to paddle with, and what equipment to wear and bring along, the kayakers had to continue evaluating their decision against new hazards presented by the constantly changing river environment. They followed rules such as, "Don't paddle beyond what you can see." They asked themselves, "Will I try to surf on that wave?" and "Will I paddle this section of the river, or will I walk out?" The answer to these questions involved weighing the perceived benefits against the potential losses. The weight of the perceived benefits and losses depended on the kayakers' assessment of the river environment and their assessment of their own ability to handle the risks identified in the river environment.

White water kayaking is a social sport and the actions and opinions of other kayakers influenced the decision making process. Another factor influencing the kayakers' risk decision-making was the strength of their beliefs of self-efficacy. The intense feelings of fear and exhilaration generated by participation in the sport challenged these beliefs and thereby influenced the kayakers' risk decisions. The kayakers cited a difference in levels of risk tolerance as a factor influencing the decision making process. Analysis of the kayaker's description however, revealed their basic tolerance for risk was overshadowed by other factors: age, sex, stage of life and most importantly beliefs of self-efficacy. The study showed that the kayakers did not always use a process of careful deliberation before engaging in risk behaviours. At times they "just went for it."

Non-Deliberative Risk Decision-Making

There were different reasons for not deliberating the risk decision. These differences were influenced by the kayakers' level of experience. The less experienced kayakers, who "just

went for it" either failed to recognize anything unusual in the situation or they were able to identify the risk in the situation, but they mistakenly felt that they had the skills to handle the risk. Their lack of knowledge caused them to make an inaccurate assessment of the situation. They focussed on the expected benefits of participating in the risk activity, ignoring the possibility of loss. Failure to accurately assess the risk situation impaired the quality of risk decision-making, as the kayakers were not able to identify options that would reduce the risk of injury. This failure was shown to put the less experienced kayakers in terrifying situations.

The more knowledgeable kayakers also did not always engage in deliberative risk decision-making. Frequently they observed the situation with experienced eyes, alert to subtle warnings of danger. They chose to participate in the sport because of the expected benefits but they were also aware of the potential for loss. Because of many years of experience they were better able to assess their level of skill quickly and accurately. The more knowledgeable kayakers' risk decision-making depended on experience-based intuition rather than a process of rule-following deliberation, weighing possible benefits and losses. Dreyfus & Dreyfus (1986) state the skilled behaviour of the expert is "based on holistic pairing of new situations with associated responses produced by successful experiences in similar situations" (p.35). The most experienced kayaker described his process of decision-making as being "almost Zen like" (Jim, p.10).

Development of Effective Risk Decision-Making Skills

The process by which the kayakers learned effective risk decision-making was complex, involving the development of skills, knowledge and beliefs of self-efficacy. The social environment in which the learning took place affected the development of these resources and a discussion of its role is included as each of the resources is considered.

Skill Development. Handling the risks involved in paddling white water required skill. The kayakers needed the ability to correctly match their skill to the challenge of the situation. If

they were not able to successfully roll their kayaks in any condition they needed to recognize and avoid situations that would require this skill. They required the ability to right their kayak after being flipped over by the white water and they needed to be able to do this in very difficult conditions. They needed strong paddle strokes to navigate the rapids and to brace the kayak to prevent flipping. The kayakers needed to be able to provide rescue should the need arise. This included towing a companion to shore or setting up a pulley system to rescue a companion from a logjam.

The interviews revealed different processes through which the kayakers learned these skills. Initial instruction provided in a kayaking course or when paddling with experienced kayakers was crucial to the development of correct techniques. Without this initial instruction the kayakers developed faulty techniques, increasing their risk of injury. When the instruction took place in a safe environment such as a pool or lake, it allowed the kayakers to focus on skill development rather than worrying about the hazards of the river environment. The kayakers were given short rules to follow to aid in remembering the techniques. Rules such as, "lean forward and kiss the deck" to wet exit and "head down and hip flick" to roll. These rules helped the less experienced kayakers to remain focussed in threatening situations. The Dreyfus Model of Skill Acquisition (Dreyfus & Dreyfus, 1986) states that at the novice level participants follow rules that are "context free". The kayakers' actions supported this model. As the kayakers became more experienced they realized there were some situations in which the rules did not apply. It was not always safe to "lean forward and kiss the deck" and wet exit; rather it was safer to stay in their kayak and try to roll up. The kayakers' past experiences began to serve as a base for decision making. As their skills continued to develop, the kaykers' actions became automatic responses but the skills were situation specific. The kayakers may have an automatic roll in one area of the river but when overturned in a more difficult area of the river they may revert to rule-following behaviour.

Following the initial instruction, the kayakers practiced frequently to master the skills. Those who failed to practice did not progress. All kayakers learned from paddling with experienced kayakers. They watched the experienced kayakers and tried to imitate their actions. Many kayakers read books and watched videos on kayaking and river rescue. They took first aid courses and wilderness survival courses. They expressed a keen desire to develop the skills which they believed would provide options that would minimize their risk of injury, while still allowing them to experience the thrill of paddling in white water. The psychomotor skills were the most quickly learned elements of effective risk decision-making. Developing the knowledge about when and where to apply these skills required more time.

Knowledge Development. The kayakers' ability to plan ahead to be prepared for the worst case scenario was essential in enabling to them to see a variety of options in the risk situation. Preparing for the worst case scenario required that the kayakers had a thorough knowledge of the river environment. They needed to know how to assess the river, how to read the currents and how to recognize upcoming hazards. They needed to know how to assess their equipment, to know what type of equipment was best for the situation, and to know how to use the equipment. The kayakers also had to be able to accurately assess their skill level and the skill level of their companions.

The less experienced kayakers developed this knowledge primarily by paddling with experienced kayakers and by engaging in many different situations themselves. The knowledge was developed in a manner described by MacLeod (1996); the kayakers became experienced by experiencing. The kayakers' learning accompanied changes in noticing and understanding the river environment and the effect of their actions on this environment. Their learning was also made possible by noticing, understanding the environment and trying out new actions.

The kayakers' learning was influenced by the nature of their engagement in the social environment. When the kayakers were in positions described in the literature as "legitimate peripheral participation" (Lave & Wenger, 1991), they stretched themselves to learn and take on

new challenges. It was important for the less experienced kayakers to paddle with experienced kayakers who were concerned for the safety of the group and were willing to share their knowledge. When the kayakers were in positions where they perceived themselves as being a liability to the group they were held back from learning.

Knowledge development was an ongoing process. Some knowledge was built up over a long period of time, paddling the river at different times of the year, over many seasons. At other times knowledge was gained quickly. These were the times when the kayakers experienced a mishap, when they felt they were at risk of injury or death and were unable to control their actions. Experiencing these crisis situations or watching others experience a crisis situation created the greatest awareness of potential losses. These were the types of experiences described by MacLeod (1996) as "watershed" experiences. These experiences gave the kayakers a reality check of their assessment skills. It was following these situations that the kayakers reported being more selective in choosing their risk experiences.

As stated earlier, kayaking is a social sport. The risk decisions were made while paddling in a social environment. The decisions were discussed and evaluated as a group. Initially the less experienced kayakers merely listened and observed the complex process of risk-decision making. They relied on the decisions of the more experienced kayakers to enable them to handle the risks. Later, as knowledge and skill developed, the less experienced kayakers became more involved in the decision making process. They discussed the situation with the other kayakers, attempting to understand and interpret the meaning of the situation for themselves. In this manner the kayakers progressed from broadly peripheral positions into positions of full participation. They learned from actually participating in the social interactions and the discussions, from observing the experienced kayakers and their peers and from making decisions and paddling the river themselves. In this way the kayakers learned to identify and evaluate the benefits and possible losses associated with the choice. In the literature it was noted that loss identification is a major

part of formal risk analysis (Yates & Stone, 1992). As they became more aware of the potential risks in a situation the kayakers became more selective in choosing their risk experiences.

During the social interactions the experienced kayakers also communicated their values to the less experienced kayakers. The experienced kayakers valued safety for all members of the group. Through discussion, the less experienced kayakers learned that it was socially acceptable to say "no" to any risk activity where they were not confident of a successful outcome. The fact that experienced kayakers valued the acquisition of psychomotor skills and the development of good decision-making skills motivated the less experienced kayakers to develop these skills themselves. The less experienced kayakers learned the right to participate in a risk activity also came with the responsibility to ensure no one else was put at risk because of the actions of the risk taker. The values supported in the social environment encouraged the less experienced kayakers to learn rescue techniques and acquire rescue equipment. In this experiential type of learning situation the kayakers also developed beliefs about their ability to handle the risk.

Development of beliefs of self-efficacy. The kayakers' belief in their capabilities to maintain control of their actions in a particular situation was the most important factor influencing their risk decision-making. As Bandura (1990) states, self-efficacy is the belief that one is capable of succeeding at an endeavor. It was strong beliefs of self-efficacy which enabled the kayakers to confront their fear and actively seek out the risk experience, anticipating the thrill that came when they successfully challenged the river environment. Those kayakers with strong beliefs of self-efficacy were eager to develop their skills and knowledge and they therefore progressed quickly.

The development of skill and knowledge further enhanced beliefs of self-efficacy. Supportive, experienced companions ensured that the less experienced kayakers were in situations where they would be able to achieve success. Experiencing success in a venture appeared to be the most important factor in strengthening beliefs of self-efficacy. Experiencing success in past performances gave the kayakers the confidence to try new challenges.

Unsuccessful experiences also affected the kayakers' beliefs of self-efficacy. The effects of a misadventure varied depending on the strength of the kayakers' beliefs. Those who had experienced many successful situations and developed strong beliefs of self-efficacy viewed the mishap as a challenge and were strongly motivated to get back in their kayaks and try again. Keyes (1985) states that there is a point of useful risk taking where fear is met, confronted and used as a source of both caution and energy (p. 276). The kayakers' descriptions showed that feelings of fear alerted them to the potential for loss but also helped them to focus more clearly on the task at hand. When they focussed on the task at hand they were better able to identify the options that allowed them to handle the risks. If they were unsuccessful in their venture, the presence of experienced kayakers who were able to provide rescue afforded another option that reduced the risk of injury.

Those kayakers who had not developed strong beliefs of self-efficacy had their confidence in their abilities further undermined by an unsuccessful experience. They judged their performance partly through comparison with others in the group. If they were not able to experience success in an activity that was successfully completed by others in the group, it had the effect of weakening their beliefs of self-efficacy. When they did not have strong beliefs of self-efficacy the kayakers did not anticipate a successful outcome. They were fearful of new challenges. In a challenging situation, those kayakers who did not have strong beliefs of self-efficacy were less likely to identify options that would enable them to regain control of the situation. They were more likely to panic in a risk situation, further increasing the chance of failure. This showed how important it was to correctly match the level of skill to the challenge of the situation.

Flow. Flow experiences are closely linked with the development of beliefs of self-efficacy. It was noted in the kayakers' descriptions that there were many times in which their concentration was so focussed they had no attention left to think of other worries or frustrations. When this intense focus caused them to successfully control the situation they experienced a

"natural kind of high" a feeling of "Oh Yeah!" This appears to be the feeling described by Csikszentmihalyi (1990) as 'flow'. It was this feeling that kept the kayakers coming back, seeking greater challenges. Csikszentmihalyi (1990) found that no activity could sustain flow for long unless both the challenges and skills become more complex. Seeking the flow experience caused the kayakers to stretch themselves to develop better skills and more knowledge. In doing so the kayakers developed stronger beliefs of self-efficacy. Their experiences also appeared to make the present more enjoyable for the kayakers. All the kayakers appeared to have a zest for life.

It was the active participation of the kayakers in the social environment of white water kayaking that seemed to be the most effective process by which the kayakers developed skill, knowledge and strong beliefs of self-efficacy. Their active participation in the kayaking community allowed the kayakers the opportunity to experience the consequences of their risk-decisions in a safe environment. By participating in the social community they learned to recognize and respect the rights of other kayakers.

This study has increased the understanding of the individual and situational factors which influence the learning and practice of risk-handling behaviours. These findings have implications for those involved in adventure recreation and also for those involved in health promotion and disease/injury prevention.

Implications

The search of the literature revealed a need for increased understanding of the concept of risk handling to better direct educational efforts. The increased understanding of risk handling developed in this study has significance for those involved in health care who develop programs aimed at promoting health and preventing disease and injury and also for those in the field of adventure recreation who develop white water kayaking programs.

Adventure Recreation Implications

The beginner kayakers were most at risk of injury. Developing programs that enable the less experienced kayaker to learn, not only the technical skills of paddling, but also the more important skills of effective risk decision-making may reduce their risk of injury. It was shown that when the kayakers challenged themselves and experienced 'flow' their beliefs of self-efficacy were strengthened. Strong beliefs of self-efficacy were shown to improve decision making abilities by increasing the kayakers' ability to identify options in the risk situation. The kayakers' experiences lend support for developing programs which follow Csikszentmihalyi's (1990) suggestions for transforming physical acts so as to produce flow. These strategies provide guidelines for program development.

The kayakers who received initial instruction learned correct techniques and developed an increased awareness of the risks involved in the sport. If sports outfitters, magazines and videos promoted the benefits of instruction it may persuade more people to enroll in kayaking courses, helping them to more quickly develop the skill and knowledge necessary for effective risk decision-making.

Helping course participants set overall goals and as many sub-goals as feasible, and then establishing ways of measuring progress in terms of the chosen goals, may help to develop flow experiences (Csikszentmihalyi, 1990). Group learning in the natural river environment, where there is an opportunity for discussion, is an important means of building a sense of community and imparting the value of safety for all members of the group. Group discussions involving risk decisions help the beginner to identify not only the potential risks in the situation, but also options for handling the risk.

Instructors need to attend to the progress of the group. A gradual progression, allowing the learners opportunities to experience success in their endeavors, is necessary for the participants to experience flow and to develop strong beliefs of self-efficacy. It may be necessary to form groups based on the characteristics of the learners (e.g., sex, age and tolerance for risk) to

allow the learner the opportunity to experience a feeling of success, as learners judge their progress based on a comparison with others in the group. There should be opportunities for the learners to practice in the natural environment accompanied by experienced kayakers.

Once the learners have confidence in their abilities to succeed it is equally important to provide unsuccessful experiences in a controlled situation. Experiencing mishaps when the learners have developed strong beliefs of self-efficacy creates an awareness of the current limitations of their abilities and serves to motivate the learners to gain further skills and knowledge. Programs following these guidelines provided opportunities for kayakers to learn the effective risk decision-making skills necessary for handling the risks of the sport. Using these guidelines to develop programs which promote health and prevent disease and injuries, may also help participants develop the effective risk decision-making skills necessary for handling the risks of life.

Health Promotion, Disease/Injury Prevention Implications

Developing effective decision making involved the development of skills, knowledge and strong beliefs of self-efficacy. Developing these abilities, then, should be the goal of disease and injury prevention programs. To be effective a program has to first reach its target audience. In the literature we saw that people engage in risk activities because of expectations of positive outcomes (Fromme, Katz & Rivet, 1997). The white water kayakers' behaviour supported this finding. Programs which focus on the increased benefits that can be anticipated if people develop effective risk decision-making skills may therefore be more effective than programs which focus exclusively on the negative aspects of a risk activity. The findings suggest that using a positive message, where people anticipate receiving some benefit through integrating or learning the information, may motivate them to more carefully evaluate the information in the communication. For example, programs and messages intended to persuade people to quit smoking may be better received if they focussed on the positive effects of not smoking rather than

the negative effects of smoking. A message that talked about the benefits of clean smelling hair and fresh breath combined with information regarding methods and services available to assist people to quit may be more effective in actively engaging people's thought processes. This approach contrasts with current messages that focus exclusively on the negative aspects of smoking by showing a picture of a blood clot in a brain or a person smoking through a tracheotomy.

Once people are interested in learning how to develop effective risk decision-making skills, the information may be more effective if presented in a group situation. Group presentations allow the opportunity to actively involve the learners in the activity. In this study knowledge was transmitted through the social interactions that occurred while paddling the river. Information can be presented by drawing on the experiences of the participants. When opportunities for group discussion regarding risk decisions are provided, the learners gain an awareness of the possible losses resulting from their actions. Loss identification was shown in the literature to be a major part of risk analysis (Yates & Stone, 1992). In these group discussions health care providers may gain a better understanding of the benefits people anticipate from engaging in their risk activities. This discussion may help participants identify options that reduce their risk of disease or injury.

People need to feel they are capable of preventing disease and injury through their own actions. They need to be given instruction on how this may be done and then allowed the opportunity to practice the activity in a safe environment. Instructors need to attend to the progress of the group as the kayakers did, to ensure people have the opportunity to experience success in their endeavors. For example, in a seniors fitness class which has the ultimate goal of preventing falls, it may be helpful to have an instructor who is also a senior conduct the sessions, starting with slow paced, relatively easy exercises. As suggested in the adventure recreation implications, it may be helpful to have the seniors establish clear goals and then determine ways of measuring their progress against these goals. One way of doing this would be to add some

weight training to their exercise program. Being able to increase the amount of weight lifted is a clear indication of progress. When the seniors find they are able to do these exercises and increase the amount of weight they can lift, they may be more inclined to take on other challenges, such as walking or dancing.

Once people believe they have the ability to handle the risk, it is important to create an awareness of the current limitations of their risk-handling abilities. This could be done by role playing, providing simulated experiences or as is currently done in the Steady As You Go Falls Prevention Program, by having the participants keep a record of all their falls and near falls and allowing time for discussion of these events. This may motivate people to continue with the program.

None of these ideas are new. What this study has done is incorporate the findings from several bodies of research: adventure recreation, risk decision-making, experiential learning and health promotion and disease/injury prevention. The study provides support for Fromme, Katz and Rivet's (1997) suggestion that health promotion and disease/injury prevention strategies could recognize the appeal of risk activities while encouraging steps towards minimizing risks. It has provided suggestions for marketing health promotion and disease/injury prevention programs with a positive focus to attract interest. It has also provided suggestions for creating awareness of the risks in a situation to help those who are unaware of the risks of their activities.

Reviewing the adventure recreation literature and exploring a different population of risk takers has revealed important information on how risk handling behaviours are fostered. The study has revealed the benefits of engaging in an activity that produces 'flow'. If more people experienced 'flow' it may be that there would be fewer people engaging in less socially acceptable risk behaviours. Those involved in recreation who advocate for more of these recreational opportunities may benefit from the support of those involved in health care.

This study has examined one group of risk takers and the process by which they learned to handle the risks. This information has provided guidelines for developing programs to help

people learn to effectively handle the risk situations present in our daily life. It also showed that engaging people in discussions, helping them learn to identify and then learn to handle the risks involved in their activities may better enable them to take control over and improve their health, the ultimate goal of health promotion.

Suggestions for Future Research

The qualitative methodology of this study allowed for in-depth exploration of the white water kayakers' experiences in learning to handle the risks of the sport. This methodology yielded rich, detailed descriptions of the kayakers' risk-handling behaviours and the processes by which these behaviours were learned. While the study provides in-depth information about the meaning of white water kayaking and risk-handling behaviours it also points out where further research is merited.

The literature revealed that there was a lack of situational analysis in the study of risk-taking (Yates, 1992). This study identified some of the individual differences between the white water kayakers and identified some of the factors in the white water environment which affected the kayakers' risk-taking behaviours. It was noted that the size of the group, the nature of the companions and the nature of the engagement of the kayakers in the group affect learning and risk-taking behaviours. Future research in natural settings examining other groups of people engaging in high-risk sports would further increase the understanding of the role of individual and situational differences in risk-taking behaviour. Group development came out in the data as being important to the development of risk-handling behaviours but it is beyond the scope of this thesis to explore this literature to the extent it merits. The process of group development in risk decision-making is therefore recommended as being an important area for future research.

This study has shown that beliefs of self-efficacy influenced perceptions of risk and appeared to account for some of the perceived gender differences in tolerance for risk. There is a need for further research to develop explanatory theories for these individual differences. Future

research will benefit from the examination of the transferability of effective decision-making abilities and risk-handling behaviours from one area of life such as recreation to other areas of life, such as driving safely or engaging in other preventive health behaviours.

Summary

This study has increased the understanding of the risk handling behaviours of white water kayakers. Included in this understanding of their risk handling behaviour is an awareness of the complex, dynamic process of risk decision-making. The kayakers' process of risk decision-making and subsequently their risk-handling behaviour varies across situations and individuals. These risk-taking behaviours are imperfect indicators of the actual risks the kayakers are taking. A less experienced kayaker may be at far more risk of injury in a relatively easy stretch of river than is an experienced kayaker in Class IV white water.

Not all kayakers in the study engage in a process of careful, deliberative risk decision-making. The more experienced kayakers intuitively respond to cues in the environment, fluidly implementing strategies, which allow them to experience the thrill of the sport without coming to harm. The less experienced kayakers, lacking knowledge or over-estimating their level of skill, focus only on the possible benefits of the activity without regard for the potential losses. Without a process of careful decision-making, they are unable to define choices and implement strategies to keep them from harm. It is these kayakers who are most at risk of injury.

The kayakers need skill, knowledge and strong beliefs in their abilities to handle the risks before they are able to integrate all the information necessary for effective risk decision-making. The development of these attributes is a process which occurs over time, with instruction and with experience.

This research demonstrates the importance of interdisciplinary collaboration. In adventure recreation the focus is on providing challenging recreation opportunities, focussing on the positive benefits of a risk experience. In health care the current focus is on reducing or

eliminating the risk experience. By working together, those in health care can gain a fresh perspective on risk activity and those in adventure education can encourage participants to transfer the effective risk decision-making skills learned in their programs to other areas of their lives. This study supports a philosophy of disease/injury prevention that recognizes risk activities have positive as well as negative consequences. It provides guidelines for developing programs which teach people the skills to handle the risks, thereby enabling them to take responsibility for their own health.

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APPENDIX A

CONSENT FORM

The Risk Handling Behaviour of White Water Kayakers and How it is Learned

AGREEMENT OF PARTICIPATION

This thesis research for my Masters degree in Community Health at the University of Northern British Columbia in Prince George involves an exploration of the ways white water kayakers learn to handle the risks of the sport.

If you agree to participate, I will ask you to donate your time for one interview, approximately one hour in length. All interviews will be held at a time and place chosen for your convenience. All interviews will be kept strictly confidential and the interview transcript will not be available to anyone else but me. Your name will never be used, including in the interview recording and transcript and you will not be identified by any means in future publications that may result from this research.

If you agree to participate in this study, you may withdraw at any time, without explanation.

If you have any ethical concerns about this study please call Dr. Max Blouw, Dean of Graduate Studies, 250-960-5820.

If you have any questions or wish to contact me, please call me at work, xxx-xxxx or at home, xxx-xxxx.

Your signature below will indicate that you understand and agree to the terms of participation in the study. Please sign two copies and keep one. Thank you for your assistance.

Sally Rigoni
Health and Human Sciences
University of Northern British Columbia
3333 University Way
Prince George, BC V2N 4Z9

Name_____ Signature_____

Date_____ Witness_____

APPENDIX B

THE INTERVIEW GUIDE

Can you describe your best kayaking experience?

Probes: What made it go particularly well?
Where were you? What was the Class of river?
Who was with you? Right people/wrong people
What is the usual number in your group?
How do you choose your kayaking friends?
How is the group organized? Leaders/ followers?
What are the characteristics of the leaders?
Are there any differences in paddling with a group of women or a group of men?
What did you see as the risks involved?
How did you feel about these risks?
How did you handle the risks? equipment? skill/ knowledge?
How did you learn to handle the risks?

Can you describe your worst kayaking experience?

Probes: Who was with you?
What did you see as the risks involved?
How did you feel about these risks?
How did this experience differ from your best kayaking experience?
How has this experience affected your present kayaking behavior?

Was there a particular person or situation that you learned from?

Probes: Why was the learning so effective for you?
Has the source of your learning changed over the time you have been kayaking?
How would you teach others?
What would you do if you saw another kayaker taking what you would consider to be a stupid risk?

How does the natural environment affect your actions, the remoteness of the location, the level of the water, the weather?

Probes: Has the areas of the rivers or location of the rivers you choose to paddle changed since you first started?

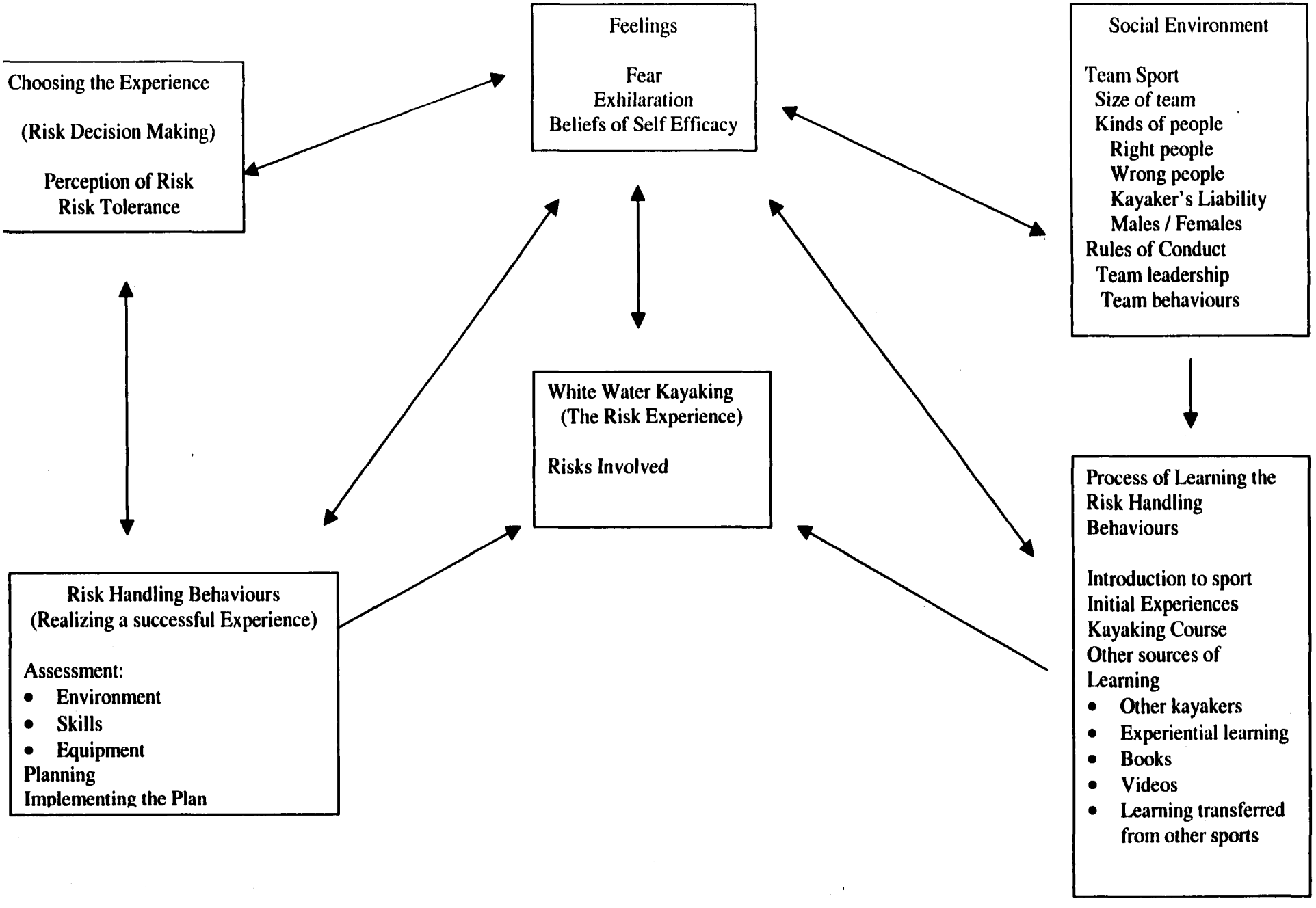
Can you tell me about your equipment?

Probes: What do you take with you on an outing?
Why do you include these items?
How did you learn about the equipment?
How do you ensure that you have all your equipment with you?
What do other kayakers take with them?

Do you participate in other potentially high-risk sports? If so, has the experience gained in white water kayaking influenced your behaviour in other sport or your daily life?

How has your experience in other high-risk sports influenced your kayaking behaviour?

Diagramming Stage – Interim step in analysis process.



APPENDIX D

GLOSSARY OF TERMS

Bigger water: areas that are more difficult to paddle because of larger waves and greater volume of water.

Eddy: the relatively calm spots found on the downstream sides of rocks, pilings, etc. Eddies are sanctuaries for resting or scouting.

Eddy out: to leave the main current and enter an eddy.

Eskimo Rescue: a method of rescuing an upside down paddler with neither the rescuee nor the rescurer coming out of their boat.

Hole: an area of recirculating water that can be difficult to get out of.

Reciprocator: another term for hole.

Strainer: a partially submerged tree with branches.

Sweeper: a tree that is either partially submerged or just above river surface.

Swimmer: a paddler who has come out of their boat while still in the water.

Technical water: difficult areas with a low volume of water.

Turbining: a term used by the kayakers when they were caught in a hole.

V-shaped tongue: a clear path through a rapid, usually the deepest water.